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ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2020



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CONTENTS

INTERNATIONAL AFFAIRS

CEMA Support to Ethiopia Reviewed (Norbert Peche; DEUTSCHE AUSSENPOLITIK, Apr 80).....	1
CEMA, Poland-GEMA Long-Term Goal Programs Discussed (Jozef Kowalewski; HANDEL ZAGRANICZNY, No 1, 1980)...	4
CEMA Microbiological Industry Cooperation Outlined (AW DDR AUSSENWIRTSCHAFT, 21 May 80).....	24

BULGARIA

Locally Produced Steel Brands Described (Kosta Kostov; RUDNICHAR, 15 May 80).....	29
Decree for Further Development of Ferrous, Powder Metallurgy (RUDNICHAR, 15 May 80).....	33
Preface, Table of Content of Statistical Guide Listed (STATISTICHESKI SPRAVOCHNIK, 1980).....	42

CZECHOSLOVAKIA

Study of Punitive Measures for Low-Quality Production Published (Frantisek Krejca, Pavel Rott; HOSPODARSKE NOVINY, 16 May 80).....	61
---	----

ERRATUM: In JPRS 75574, 25 April 1980, No 2002 of this series, pages 51 and 52 are numbered incorrectly. Please change p 51 to p 52 and p 52 to p 51.

GERMAN DEMOCRATIC REPUBLIC

Transportation System Tasks for 1980 Outlined (DDR-VERKEHR, Apr 80).....	67
---	----

HUNGARY

Last Year's Foreign Trade Prices Viewed (Gyula Szonyi; FIGYELO, 21 May 80).....	79
--	----

POLAND

Causes of Seasonal Fluctuations in Foreign Trade Discussed (Jacek Gliniski; HANDEL ZAGRANICZNY, No 1, 1980).....	85
Sejm Deputy Highlights 1979 Shortfalls (Editorial, Z. Kom; SLOWO Powszechne, 11 Jun 80)....	97
Status of Medical Apparatus, Equipment Discussed (Tomasz Sienkiewicz; SLUZBA ZDROWIA, 18 May 80)....	99
Polish Methods of Purchasing Ships Described (Wojciech Prokop; BANK I KREDYT, Mar 80).....	105
Briefs First Container-Roll-on Ship	120

ROMANIA

Dynamic Equilibrium, Efficiency in Economic Growth (Gheorghe Sica; ERA SOCIALISTA, 5 May 80).....	121
--	-----

YUGOSLAVIA

Investments in Fixed Assets in First Quarter (PRIVREINI PREGLED, 27 May 80).....	130
Agriculture-Food Production, Needs Forecast to 1985 (GLASNIK POLJOPRIVREINE PROIZVOINJE, PRERADE I PLASMANA, Apr 80).....	133
Capital Accumulation of Organizations of Associated Labor (Marijan Korosic; JUGOSLOVENSKI PREGLED, May 79)...	158
Workers Abroad, Reintegration of Returnees (Milenko Pavlovic; KOMUNA, 3 Mar 80).....	176

CEMA SUPPORT TO ETHIOPIA REVIEWED

East Berlin DEUTSCHE AUSSENPOLITIK in German Vol 25 No 4, Apr 80 signed to press 3 Mar 80 pp 103-104

[Article by Dr Norbert Pache, International Institute for Economic Problems of the Socialist World System, CEMA, Moscow: "Ethiopia's Economy Between Its Heritage and Its Future"]

[Excerpt] Aid and Support From CEMA Countries

As is true for other economically underdeveloped countries of Africa, three levels of development can be found in the economy of Ethiopia. The problem of providing enough food must be solved, problems of education (basic literacy, training of skilled workers, higher education) must be handled, and accumulative funds must be established which meet the needs of the first two development levels, as well as those of industrial and infrastructural development. The three levels are of equal importance and must be solved simultaneously, and the country is making every effort to do so. In spite of its own efforts and the advantages of socialist orientation in the planning and direction of the national economy, in spite of the mobilization of the workers, however, the inherited basic economic conditions are so unfavorable that many necessary steps along the road of economic progress cannot be taken by the country itself for a long time to come. Therefore, it is in keeping with the anti-imperialist spirit of political solidarity with a country of socialist orientation if after the overthrow of imperialism in Ethiopia the countries of the CEMA community make every effort to strengthen economic relations with Ethiopia in mutual interests.

The development of foreign trade relations had to start virtually from scratch. It is an extraordinarily difficult task to establish stable and ultimately mutually favorable economic relations beyond the international aid given by CEMA countries during the past years. Through a number of government agreements on bilateral basis, CEMA countries have given their economic relations with Ethiopia an organizational foundation, or are in the process of doing so. On this basis, the foreign trade volume of the GDR with Ethiopia, for instance, rose from less than 200,000 valuta marks in 1974 to 278 million valuta marks in 1978.

For future economic cooperation several agreements have already been made on the bilateral level as well as on the multilateral level in the framework of CEMA organizations. According to an agreement of 1977, for instance, the GDR supplies aid for the enlargement and technical improvement of the harbor of Assab. Greater cooperation is also planned in the construction of complete industrial plants corresponding to the existing GDR export structure and the products structure in the Ethiopian import situation. Technology supplied by the GDR has already proven its value in Ethiopian agriculture. Trucks of type W 50 from the GDR are also playing a decisive role in the gradual solution of the country's difficult transportation problem. In order to service these trucks as well as tractors, harvester threshers, forklifts, electric power equipment, cranes and pumps from the GDR, the construction of a service facility in Addis Ababa was begun in April 1979.

According to the Protocol on Economic and Technical Cooperation of May 1977, the USSR will concentrate its cooperation with Ethiopia on the following fields: increases in the already existing support for the development of a petroleum processing industry, completion of geological exploration work, construction and reconstruction of plants for meat and dairy production, support in projecting irrigation projects and in the fields of energy supply.

In a similar way, the other CEMA countries have also coordinated their cooperation with Ethiopia.

The educational system has an important place in the program of aid and support for Ethiopia. At the present time, the country is making great efforts to overcome the remaining obstacles of imperialist influences in this field. Some 4.3 million adults are included in the first phase of the literacy campaign. Educational opportunities for children have already been noticeably improved. Before 1974, only about 2 percent of the children between 7 and 13 were able to attend school. In 1978 the number was approximately 40 percent. A total of 2,600 new school buildings and more than 12,500 newly trained teachers assisted in this development.

Even though the problems are still great and the difference between Ethiopia and developed countries is still considerable, results in the field of primary education are already encouraging. The training of skilled workers is also making progress. Here however, the difference between Ethiopia and developed countries is even more difficult to overcome because everywhere there is a lack of qualified instructors and the necessary material conditions. CEMA countries are doing important work in this field. Instructors from CEMA countries, among them the GDR, are teaching at the University of Addis Ababa. Many specialists from the CEMA community are working as advisers in many different fields of the economy, or are training skilled workers. More than 1,300 students have successfully completed their education at the Polytechnic Institute at Bahr-Dar, which was built with the help of the USSR.

Many future specialists of the Ethiopian economy are trained directly at higher education institutions in CEMA countries. In the USSR alone, 1,300 young Ethiopians are studying. The GDR, too, offers higher education to Ethiopian students.

When the GDR party and state delegation under the leadership of Erich Honecker visited Ethiopia, a positive conclusion could be made for the relations of both countries in all fields. In the report of the Politburo to the 11th meeting of the SED Central Committee E. Honecker said:

"Through the conclusion of agreements on friendship and cooperation with socialist Ethiopia...we are making our mutually advantageous relations even closer and more productive. This is also true about the agreements on longrange economic and scientific-technical cooperation, as well as the agreements in the fields of the economy, culture, the training of cadres and many other things. All these results are in keeping with the directives decided by us at the Ninth Party Congress, namely to strengthen the natural federation with the countries of socialist orientation."*

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* NEUES DEUTSCHLAND, Berlin, 14 December 1979

CEMA, POLAND-CEMA LONG-TERM GOAL PROGRAMS DISCUSSED

Warsaw HANDEL ZAGRANICZNY in Polish No 1, 1980 pp 25-32

[Article by Jozef Kowalewski: "Cooperative Long-term Trend Programs of CEMA Countries" -- Passages enclosed in slantlines printed in boldface]

[Text] A characteristic mark of the present socioeconomic development stage of the CEMA member countries is the maximum exploitation of the possibilities of international socialistic division of labor and the growing processes of socialist economic integration. These phenomena which are becoming the essential factor of the high dynamics of CEMA member countries' development, are favorable, in an increasing degree to the growth and effectiveness of common production and international exchange within the CEMA framework. At the same time, commensurate with the development of these processes, CEMA countries are encountering in daily economic practice a series of fundamental problems. Among them, deserving special attention, are problems of equalization of the degree of technical-technological development of the leading sectors and branches of the industry, molding of mutually complementing and highly effective production structures with simultaneous development of creative forces, an acceleration of the processes of transformation of durable materials in industry, insurance of a steady, balanced economic growth in each country and finally a necessity to liquidate the growing deficits within the sphere of CEMA in the area of deliveries of modern techniques and technologies to a greater number of spheres of material production and services.

The characteristics of the enumerated problems, their meaning and extent of influence, have forced CEMA countries to search for common solutions, comprehensively taking in account the long-range development of a given issue, as well as a further intensification of already existing deep and permanent production-technical and production-commercial ties between the CEMA countries. The implementation of these complicated tasks was undertaken in the form of cooperative long-term trend programs which were worked out between the interested countries in accordance with the resolutions of the 29th and 30th CEMA sessions.¹

We find ourselves presently at a point where our accumulated practical experiences constitute a rich source on which we can draw for general-economic and methodology studies. The framework of this article does not permit a discussion of the full extent of these problems.² We wish in form of a discussion, to draw attention to some, in our opinion, most fundamental problems of methodology and application, which are connected with the preparation and implementation of cooperative long-term trend programs. Our deliberations, outside of the general characteristics of joint directional programming, will be concentrated on a synthetic evaluation of the cooperative long-term trend programs, and consequently on selected problems of implementation of those long-term trend programs, and an evaluation of undertakings accepted within the framework of trend programs for implementation of specific tasks.

I

Trend programming, as a new element of CEMA countries cooperation in the field of planning, is not a ready and ripe form of international cooperation. It creates only possibilities of formulating such facets of planning for cooperation, within the framework of coexistence, which correspond to the needs emerging from changes in national and world economics. Exploitation of these possibilities depends above all on proper, fully ground development of political and economic guidelines relevant to the development of cooperative long-term trend programs, which were formulated in party resolutions and governmental decisions of CEMA member countries. Of course, the occurrence of complications in such a new and great undertaking is unavoidable,³ however, their solution requires a rapid commencement of deep involvement in the spheres of scientific research and practical economics.⁴

Despite the short time which had elapsed from the first decisions pertaining to trend programming, a certain quantity of ideas and experiences has been collected, which now can indicate the way to exploitation of this new form of cooperation toward improving the mechanism for planning and administration of the cooperation of CEMA countries. It pertains principally to practical economics.

At the same time one can note a certain, though far from satisfying, progress in the area of methodology of long-term cooperative trend programs. The gains in this field are more valuable in that there was an absence of scientifically determined assumptions pertaining to the methodology of common goal programs. This made it necessary to determine them "en route" concurrent with planning and formulation of the concrete substance of cooperative long-term trend programs. The concurrent work on methodology and on programs proper of joint trend programming are not necessarily negative occurrences. Similar to the other fields of cooperative programming, it would be difficult to imagine that the methodology of programming of economic cooperation between socialist countries could be created out of the studies of research

scientists without contact or cooperation with the practical aspects. That does not mean, however, that one can count on practical success in such an important and complicated matter as trend programming a methodology based on theoretical precepts of common trend programming. There has to be a close contact between theory and practice. As a result of such contact, confirmed guidelines would be produced which would be effective for achievement of the practical goals set forth in the tasks outlined in resolutions of the 29th, 30th and 31st sessions of CEMA, in the area of long-term cooperative trend programs.

The starting point for a general characteristic of joint trend programming is identification of these factors which decide on the necessity of introduction of this new form of cooperation. Here one can accept an assumption that the effectiveness of economic processes of every country is predetermined by an accepted and actual combination of production structures of the particular production branches in given countries, i.e. a dependency on the level of their mutual ties, which can be complemented and developed through other countries' production structures, with first priority among them to the CEMA countries. The shaping of an economic structure demands a long lead time. It is necessary not only to take into account a long-range formulation of the needs of a given country, but also the progress tendencies on the scientific-technical front, in all their possible aspects, as well as the developments of the internationalization of economic processes on the regional and world scale. That means that the development of the cooperative long-term trend programs cannot simply be a widening of the mutual cooperation horizons of the CEMA countries in the field of planning. What we have here is a qualitatively new stage which demands a close and positive linking of efforts connected with the cooperative long-term trend programs and with long-range planning in CEMA countries.

Recognizing that the overriding premise of the present stage of socioeconomic development of CEMA countries is a necessity for long-range structural changes, one can state that the development of cooperative long-term trend programs is a common undertaking of all CEMA countries which are interested in favorably influencing, by a common effort and by means of mutual agreements, the formation of an internal production structure of each CEMA member. This is not only a matter of satisfying the rapidly growing needs, but above all a matter of a most effective solution, by common means, of an agreed upon area of problems. From this assumption another fact becomes apparent: One cannot limit oneself to an agreement upon a program of mutual goods deliveries, but rather one has to aim for development of cooperative trend programs which take into account the principles of: a) formation of optimal long-term economic structure, b) accommodation of maximum complementing of the economies of the particular countries of the community, c) trying to achieve in each country a high level of modern and effective production structures. Such programs should favor an intensive liquidation of economic hegemony which would be exhibited by a specialization of production not in the area of particular goods groups (current status), but a specialization with a single

purpose in each stage and branch or division of production, a long-term effect of creation and development of export sectors and branches.

It becomes apparent, from the above, that each goal program should contain a precise definition of the end form of the solution to a given problem of international cooperation, and should concretely answer the question: /Which objectives and effects are intended to be achieved as the result of its implementation?/ We are concerned here with the most desirable technical-technological, economic and, in certain cases, social solutions. A precise definition of objectives which are to be achieved, and a subordination to them of the complete development process of the cooperative long-term trend programs is therefore a basic condition of preservation of the essence of trend programming in the solution of selected problems of the economic cooperation of CEMA countries.

The general principles of trend programming indicate that respective to the precisely defined general objectives it is relatively easy to pinpoint the objectives in technical-technological terms, however, economic and social factors have a relatively minor meaning.⁵ In case of a plurality of socio-political goals the matter presents itself in a different light (such goals were actually formulated and indicated for solution in the course of joint programming within the CEMA framework). The actual, if not the basic role is played here by social and economic factors. The sociopolitical goals are generally not formulated with precision (conversely, they are not given to precise formulation), there is a greater probability of divergence among political goals, on the other hand, the connection between technics and technology and sociopolitical goals is not so clearly understood or clarified.

Therefore, one of the cardinal problems of joint programming undertaken by CEMA countries is the noncomparability of sociopolitical goals. This results in a number of implications of a practical nature. Choices designed /to/ achieve a specific balance between many divergent goals of international cooperation (in different programs), although they have to take in account limited resources, cannot be the simple result of a quantitative count plus a balance sheet of outlays and thus derived results. Specific programs and their implementation within the framework of the enterprise influence many other sociopolitical goals within the grasp of individual countries as well as on the scale of CEMA. In those cases a purely quantitative count and a comparison of total end effects are not possible. The "outlays" (attributed to each socio-political goal) cannot be generally measured in such quantities which would permit a direct comparison of particular trend programs.

At the same time, such approach will encounter from a purely technical point of view a number of limitations of a practical nature. It leads to a unilateral comparison of "results" which in turn demands an additional comparison of "outlays." Additionally, an assignment "in an abstract way" of values to different sociopolitical goals implemented within the framework of cooperative long-term trend programs, even if one attempts to assign them

in a way that reflects commonly accepted values, may prove to be completely unrealistic. One cannot simply determine, in an international forum, the final goal--in an abstract way--or its value or the degree in which they relate. / The actual definition of goals and their significance can take place only in the process of solution of goal programs, their form and the method of their implementation./ Consequently, the formulation of goals take place during the process of evaluation of outlays. Of fundamental value here is a clarification of relationships between the aims of individual goal programs and outlays, by means of presenting the decisionmaking organs with an array or a "set" of alternatives, with detailed explanations of their consequences and effects.⁶

It has to be taken in account that sometimes goals undergo a change: socio-political ones as well as (more frequently) technical-technological goals. These changes reflect a shift in the determination of "value" on national scale, other times they reflect the international situation or changes in the economic situation. This pertains in particular to long-range programs whose benefits are felt only after a long passage of time. Within a short period of time the impact of changes in science and technology can be readily felt on the trends of common programming. In this way, the formulation of joint programming trends encounters a series of barriers, resulting from the difficulties in forecasting the effects of the introduced programs. These difficulties occur either by reason of uncertainty over whether the program will be a successful one, or by reasons of poor understanding of the complex character of its effects. It is worth adding that this uncertainty is related not only to technical or technological factors but in a considerable way it also pertains to the effects in a social or natural environment.

Such a situation creates a number of implications for the decisionmaking process with the aim of formulating a common programming trend (goal). These decisions pertain not only to the potential future technical-technological development, but also--this results from the trend programs function of interreaction between technics, technology and needs--to the needs understood in such way that they encompass economic, social and political results. We have to identify here key decision factors, their common stipulations, and also the framework within which the future developments can be registered and evaluated.

II

The knowledge of general assumptions and principles of trend programming implemented by CEMA countries forms a starting point for a synthetic evaluation of selected cooperative long-term trend program projects which were accepted during later CEMA sessions and which at the present time are entering the implementation stage. The cooperative long-term trend program projects include undertakings on which the cooperation of CEMA countries will be focused up to the year 1990:

-- in the field of energy, fuels and raw materials;

--in the field of agriculture and food industry;

--in the field of machine industry.

These documents have been prepared based on the proposals submitted by the particular countries. Each trend planning project consists of three basic parts:

--basic assumptions of cooperation which also include an evaluation of the situation, and based on it a choice of agreed-upon strategy of action towards solution of common problems;

--an index of joint ventures whose implementation, based on cooperation, should bring realization of assumed goals;

--a schedule of accomplishment of these undertakings containing dates, participants and mode of execution of particular tasks.

The third set of documents, containing a detailed schedule of implementation of the undertakings which are subject to cooperation, as well as their mode of execution, formulate a basis for further work on trend programs, whose net effect will be a preparation for each undertaking of concrete understandings, both unilateral and bilateral, which will define the subject of the cooperation, its conditions, tasks and results for each country which participates in the implementation of the given undertaking. The particular drafts of these understandings, as they are being prepared, will be the subject of detailed agreements between the interested countries prior to their signing.

/The draft of the trend program in the field of energy, fuels and raw materials/ contains propos . . . of cooperation in three basic fields:

--fuels and energy;

--metallurgy of steel and nonferrous metals,

--chemical, microbiological and cellulose-paper industry.

The basic undertakings that comprise this program include:

-- construction, as a joint venture by interested countries, of two Khmelnitskiy-Konstantinovka nuclear power plants, each with an output of 4,000 MW;

-- construction, as a joint venture by interested countries, of two 750-kV power transmission lines, for transfer of electrical energy from the above power plants to particular countries;

- construction of several hydroelectric power plants;
- construction, as a joint venture of interested countries, of Iukovle iron ore mine and two Kzhyvorodakly-Mikhailovski iron ore enrichment combines (on Soviet Union territory), with a combined, annual, iron ore and nodules production capacity of 16.9 million tons;
- construction (on Cuban territory) of production capabilities in the area of cobalt-nickel;
- development of production capabilities in the area of chemical energy conservation products (on Soviet Union territory), and of lesser chemical energy conservation products on the territories of other CEMA countries, to include interdeliveries of these products on a compensation principle;
- construction, as a joint venture by interested countries, of vitamin A and E production plants (on territories of the Soviet Union and Czechoslovakia);
- construction, as a joint venture by interested countries, on Soviet Union territory in Mozysh, of a production plant for feed yeasts, with a targeted annual production capability of 300,000 tons;
- construction, as a joint venture by interested countries, on Soviet Union territory, in the vicinity of Boguchany of the Angara River, of a cellulose plant with a targeted annual production capability of 500,000 tons of cellulose;
- construction, as a joint venture by interested countries, on Soviet Union territory of a Yenisei cellulose-paper combinat with installation of machinery for newsprint production with an annual production capacity of 370,000 tons;
- construction on the territory of Cuba of three cellulose-paper combined plants with a joint capability of 345,000 tons of production of newsprint, bond paper, cardboard and "tissue" type paper products, plus 120,000 tons of cellulose.

In view of growing domestic needs in the area of energetics, the Polish side proposed and had included in the draft programs construction on Polish territory, as a joint venture by interested CEMA member countries of following installations:

- 750-kV power transmission line from the Khmelnytskiy nuclear power plant to Rzeszow and a power line (400 kV) from Rzeszow to Byczyna (transit line to Czechoslovakia and Hungary). The 750-kV section of the line on the Soviet Union territory will be constructed by the USSR side, however, on the Polish side it will be constructed by a joint venture of interested countries, i.e., Poland, Czechoslovakia, Hungary and East Germany. The basis of the construction financing through particular countries was settled in bilateral mode;

- thermal energy installations at the base of hard-coal deposits in the Lublin Coal Basin;
- construction of a hydroelectric power plant in Niwiska, with an output of 1,000 MW;
- development of production capabilities in the area of mining and fabrication of copper;
- construction of a methioning plant.

Among the undertakings in the fuels and raw materials programs the participation of Poland will actually be in the following:

- construction of the Khmelnitakiy nuclear power plant for achievement in 1985 of 500 MW (3 billion kWh) and by 1990 of 1,000 MW (6 billion kWh) of electrical energy. Specific conditions of participation in this construction are coordinated in the bilateral mode;
- construction on the territory of Cuba of capabilities in production of cobalt-nickel, to obtain beginning in 1982, 2,500 tons of nickel yearly;
- construction on Soviet Union territory of production installations in the area of iron-bearing raw materials, so as to obtain in 1990, 7 million tons of iron ore;
- construction on territories of the Soviet Union and Czechoslovakia of vitamin A and E production facilities so as to obtain in 1990, 65 tons of vitamin A and 135 tons of vitamin E;
- construction on Soviet Union territory of the Boguchanski cellulose combinat to obtain annual cellulose deliveries of 150,000 tons;
- construction of the Yenisei cellulose-paper combinat in parts pertaining to installation of newsprint production, to obtain in 1990, newsprint deliveries of 100,000 tons;
- construction on the territory of Cuba of one cellulose-paper combinat to obtain annual deliveries of 30,000 tons cellulose and 5,000-10,000 tons of newsprint.

In evaluating the extent of project programs in the field of energy, fuels and raw materials, it has to be stated that this program only partially secures the extent of Polish needs for basic types of fuels and raw materials, and additionally the first deliveries from the undertakings accepted in this program will begin only after 1985; the program does not contain any such undertakings whose implementation would assure for Poland an increase in the deliveries of crude oil, natural gas or lumber or wood-allied

materials. In the area of chemical energy conservation products the needs of Poland will only be partially covered, however, the results of the undertakings foreseen in the program will equally become apparent after 1985 or even after 1990. Consequently a different situation in the field of fuels - raw materials will surface particularly during 1981 - 1985 period, especially since it will coincide with the implementation of the entire program, which will demand financial and material input from Poland.

The program schedule foresees the development, coordination and signing of multilateral and bilateral agreements in relation to each undertaking. To this date the following agreements are developed and are in the coordination stage:

- relative to the construction of Khmel'nitskiy and Konstantinovka nuclear power plants;
- relative to construction of the 750-kV power line from Khmel'nitskiy to Rzeszow;
- relative to the development of production of chemical energy conservation products on Soviet Union territory, and of lesser chemical energy conservation products on territories of other CEMA countries, and their mutual interdeliveries based on the compensation principle;
- relative to the development in the area of cobalt-nickel production capabilities on the territory of Cuba;
- relative to the construction of a feed yeast plant on Soviet Union territory in Mozysh.

(The draft program in the field of agriculture and food industry/ includes undertakings whose goals are:

- an increase, in each of the CEMA member countries, of meat, vegetable fat and grain production;
- exploitation of biological resources of Antarctica for food and feed purposes through acquisition and preparation of supplies of krill;
- development of production of garden truck vegetables, potatoes, condiments (inclusive of tea and coffee), feeds and also sugar and citrus fruits;
- an increase in deliveries of cotton to interested CEMA member countries through construction on Soviet Union territory of industrial-agrarian complexes;
- specialization and mutual exploitation of genetic properties of cattle, swine, sheep and poultry as well as new seeds, new varieties and agricultural hybrid strains;

- developments in the production of deficit agricultural products and an increase in their mutual deliveries through application of various forms and methods of economic stimulation, with aid of special credits, contract prices, preferences and a greater differentiation of seasonal prices.

The program in the field of the agricultural food industries does not stipulate any concrete, mutually undertaken enterprises of CEMA countries, aimed at satisfaction of their needs for the basic food products, such as meat, fats and grains. It has been accepted as a stipulation of the program that these problems will be solved by the individual countries within their own competence. The mutual undertakings were in the main part directed at:

- acceleration of production of specified items for specific climatic zones for the purpose of satisfying the needs of other countries. In this area, Poland is interested in obtaining from other countries mainly tropical (including citrus) fruit, grape wines, certain kinds of vegetables and cotton. At the same time Poland is planning to export to other countries fruit, vegetables and their products, and will additionally specialize in the production of potatoes and their products;
- increase the role of biological progress (seed science, stud specialization) in the development of agricultural production, through concentration of the means of particular countries on specified problems (by calling for joint research groups, coordination centers and by intensification of specialization in this area;
- faster and more comprehensive deliveries of the food industry of industrial origin means (machinery and equipment, products of chemical industry such as: phosphorus bearing raw materials, feed yeasts, vitamins A and E, synthetic aminoacids);
- the problem of exploitation of the biological potential of Antarctica is to be solved by a joint effort to obtain food, feed and other products (krill) in which Poland has expressed an interest, also included is a project for cultivation of soil on the territory of Mongolia.

/The program draft in the field of machine industry/ contains propositions for cooperation in the area of availability of machinery and equipment designed to:

- pumping and transportation of crude oil and natural gas;
- chemical industry, refining of crude and gas;
- mining industry;
- metallurgy of steel and nonferrous metals;

--agriculture;

--food industry.

Also, in the development area of machine industry production branches which would insure quality transformation (qualitative improvement), in particular:

--digitally guided machine tools, automated machining lines, special and unique heavy machining equipment, automated apparatus for machining of plastics, complex foundry equipment;

--hydraulic and pneumatic components, using mineral ceramics and tungstenfree, hardened alloys, industrial robot-manipulators;

--automated systems for conduct of technological processes, integrated microcircuits and special technical equipment for production and inspection/testing of electronic products.

Within the framework of studies on the agreed program, there emerged 325 line items of machinery and equipment relative to which the countries have presented balance data in the area of production, export and import and have stated proposals toward solving of particular problems, with the proviso that program for machine industry development in support of the needs of nuclear energetics was separated and developed on a different level--it was accepted at the 31st session of CEMA. Consequently a total of 97 tasks were formulated for 11 task forces, among them: 33 subjects in the area of specialization and cooperation in production activities, 11 tasks in the area of development by joint efforts or by a coordinated production potential, 32 tasks in the area of scientific-technical cooperation and 21 subjects in the area of standardization and unification.

Currently, in all noted undertakings, the countries participating in their fulfillment have been identified. Stated times have been set for preparation of agreements or propositions pertaining to the means of fulfillment of specified undertakings, also, the CEMA or international organizations which will prepare the agreements or propositions for task realization have been identified. In almost all the developments at least seven CEMA member countries are participating: Bulgaria, Hungary, East Germany, Poland, Romania, the Soviet Union and Czechoslovakia. Execution of specified tasks falls mainly during the years 1979-1980, and the closing dates for preparation of agreements and or propositions of implementation of a given undertaking are listed as follows:

4 subjects in 1978, 58 subjects in 1979, 21 subjects in 1980, 13 subjects in 1982 and 4 subjects in 1985.

A review of general assumptions of joint trend programming and texts of specific projects undertaken within the cooperative long-term trend programs' goal programming, permits undertaking considerations relative to the implementation of cooperative long-term programming. It has to be added here, that an analysis of these problems can be conducted only in strict connection with the text of official documents, which contain specific programs and derivative reports of CEMA and national organizations which initiate the implementation stages. The purpose of such analysis is above all to find an answer, or strictly speaking, the establishment of set procedures for finding answers to specific questions,⁷ among which the basic question is: As a result of cooperative long-term trend programs implementation, are there any, and what changes which will occur in the basic functions and processes of activity of units, branches and sectors of economy participating in the implementation of cooperative long-term trend programming on their elemental scale, as compared to that which constitutes current daily practice?

Looking for answers to a question formulated in this manner, one can make certain assumptions which will narrow the field to an area of concrete facts. We may assume, that cooperative long-term trend programs implementation in economic branches and sectors which participate in cooperative long-term trend programming, will be based on finding such approaches to modification of the status quo, that almost as if by natural means the functions and activities of economic units of these sectors and branches and their organization would develop and transform in the direction of enrichment of the status quo by those elements which result from cooperative long-term trend programming. Despite its apparent obviousness, this is an assumption with profound consequences to the entire future course of reasoning and action. From the above thesis one can stipulated following conclusions:

- the cooperative long-term trend programs will be implemented within the scope of existing basic and definite types of functions and the scope and form of activity;
- the implementation of cooperative long-term trend programs will not be a "fundamental" phenomenon in the development of specific sectors and branches of industry. Instead, it should be described as a continuation of heretofore conducted processes directed and defined to a specific goal, based on change of structure and weight of elements which form the essence of particular sectors and branches of industry as economic subjects. The implementation of cooperative long-term trend programs should be a "fundamental" change of economic indicators of selected industrial sectors and branches with regard to the national economy.

At this time another, very factual question, suggests itself namely: To what degree of undertaking planned within the framework of cooperative long-term trend programs is it possible to formulate a correct evaluation of

economic effectiveness? In other words, to what subjective or objective degree of centralization or decentralization, and on which administrative level does one have to contemplate concrete designs? This question has a basic meaning for the practical side of the implementation of cooperative long-term trend programs.

In official cooperative long-term trend programming documents, in the area of extraction and processing industries, the following basic goals are differentiated by their meaning, in addition to their details:

- fulfillment of CEMA countries' needs for machinery and equipment, with general reference to products;
- fulfillment of CEMA countries' needs for basic energy carriers, raw materials and semi-finished goods;
- establishment of cooperation in these areas;
- economical integration of national economic activity.

The meaning of these goals brings forth a series of remarks which could be of great importance for the implementation processes of cooperative long-term trend programs.

Fulfillment of needs/ mainly for machinery and equipment, energy carriers and raw materials of CEMA member countries, by their own efforts, makes up a task of which a precise definition is perhaps the hardest task in itself, while at the same time having the most extensive relationships to economic development in its entirety. The extent of amounts and varieties of types of machinery and goods production, also the energy carriers and raw materials, basically preclude at the present time the problem of any country's Autarky in these economic areas. One has to recall that the problem of Autarky is not a technical problem but rather a technoeconomical one. The leading, highly developed countries, both socialistic and capitalistic, could produce all (in general simplification) kinds of machinery and goods, as well as a qualitatively superior number of energy carriers and raw materials. But the fact of the matter is, that a manufacturer in another country, has meantime already solved earlier technical or technological problems connected with it and can produce a given product or raw material cheaper.

Relative to the electrical machinery industry, the complexity of the components which occur in the area of utilization of machinery and equipment is the reason that the evaluation of degree of fulfillment of their own needs by CEMA countries themselves has to be determined in the area of utilization and not by an analysis of the balance sheet of production. This characteristic of machinery complexes and fabricating equipment, which form a given technological or functional train, make it a fact that their evaluation cannot be based on purely numerical or percentual data of domestic or foreign production.

At the same time it must be remembered that by shortages and lack of variety of choice in production of machinery and equipment in CEMA countries, the qualitative problems are predominant at the present time, both in the evaluation of activity as well as in the development programming of the electrical machinery industry. Therefore, an important element of reduction of delivery shortages, implemented within the cooperative long-term trend programs framework has to be technical progress, aimed at a cumulation of several functions within one machine or piece of equipment, a widening of these functions by means of production of derivative machines, or simply by increasing the productivity of machinery and equipment. Of course we are talking about progress as a continuing function and not as a one-time application of the subject which would then be copied for many years.

Finally, in fulfillment of needs, while operating on a fixed production potential in the area of extraction and processing industries, an important role is performed by the distribution system. The distribution system also has several faults: being based on mutual long-term agreements relevant to goods exchange and also being contingent on deliveries of stated energy carriers, raw materials and machinery and equipment. It has also some good points and it is widely used at the present. One can assume that within the framework of cooperative long-term trend programs it will be developed still further.

It is hard to define in which cases one or the other will prevail. Experience indicates that a true evaluation can be rendered only after an analysis of the development processes of given groups of products over a long period of time. Here the deciding criteria should be the course and the results of production in the area of application of scientific-technical progress in relation to the world level progress.

The benefits of the discussed distribution system, let's call it direct distribution, are in the planning possibilities for undertakings implemented within the framework of cooperative long-term trend programs, by the producers as well as the recipients, within relatively defined financial and material parameters. The faults of this system are so numerous unfortunately, that their chief characteristic is the fact that they manifest themselves in an indirect manner and always with some delay.

Planned deliveries are difficult to alter, even in the eventuality of a need for correction expressed by both sides. In this way either the recipient must make profit from that which, because of occurring economic circumstances, is being rendered less and less valuable, or the producer is bound to continue a manufacturing process which for various reasons is becoming less and less attractive, while at the same time having his production potential all tied up.

/Cooperation/ in the field of extraction and processing industries, while relatively easy to identify and define in general terms, becomes difficult to accomplish in areas of advanced specialization. An analysis of official

documents relative to texts of particular cooperative long-term trend programs permits the formulation of the following observations which are directly related to the implementation of cooperative long-term trend programs. Between the general statements of these documents, which pertain mainly to a narrowly specialized group of products (such as individual kinds of an energy carrier, raw material or type of machinery or equipment), and the application of exchange, which in many cases could be qualified as cooperation, there is a lack of intermediate steps. It must be understood that the actual practical difficulties occur in furthering the essence of the above-mentioned general statements pertaining to cooperative long-term trend programs, and in furthering the classical line of economic planning: Program (plan) of [industrial] branch = ministry -- program (plan) of the (association) branch -- program (plan) of the product type group -- program (plan) for the development of production of specific products. It may well be, that the blame for relatively slow progress of the implementation of cooperative long-term trend programs can be placed on these differences.

In connection with the above, the formulation of cooperative long-term trend programs' cooperation concurrent with an implementation of their undertakings, encounters serious methodological and essential difficulties in application of procedures used in economic planning. To go one step further it forms the basis of the following conclusion: The extent and essential qualities of the cooperative long-term trend programs which fall outside the precepts of planning techniques, is in a sense outgrowing the possibilities of the current system of management and decisionmaking processes within the scope of the extraction and processing industries of CEMA countries.

This general conclusion can be supported by several concrete statements:

First, the development of cooperative long-term trend programs' cooperation has to be treated like every other economic process in its entire complexity and in all stipulations. Like many phenomena which occupy a span of time, the growth of cooperation cannot be defined by a hypothetical level or condition which has to be reached, instead it is marked by dynamic parameters relevant to the subjects and the objects of the cooperation. It is, therefore, important that the very concept of "cooperation" be treated in a flexible manner, not only its objectives but also the manner and evaluation of its manifestations, particularly where they pertain to the implementation of cooperative long-term trend programs. The question of a skillful application of terminology is a very actual one in the practical applications of administration of CEMA countries. It is far better that enterprises jointly achieve set economic activities without pondering the question whether or not this constitutes actual cooperation, a cooperative effort, simple commerce or vice versa.

Second, the development of cooperation in such strategic areas as the extraction industry or the electrical machinery industry, has to be based in equal measure on initiatives from both higher and lower management. Here are the factors which will not only favor, but directly demand, cooperation, though still factors of a universal character:

- rapid implementation of technical-scientific progress;
- flexibility of reaction to changes in requirements;
- efficient system of distribution.

The initiation of cooperation demands that certain initial conditions, relative to the level of accomplishment of functions and conducted activities, be fulfilled by the partners. The progress of cooperation will depend on their improvement and enrichment.

Third, as a result of a great disparity between the factor of form and scope of cooperation, it is difficult to predict in advance, based on the general premises of cooperative long-term trend programs, the actual process of implementation of particular programs. Because of this, one has to realize that elements of cooperation will be initiated at all levels of management, and the final result will be decided by a sometimes long-process of mutual accommodation of the partners. This will demand a strengthening and acceleration of those factors and mechanisms which speedup and simplify this process, based on objective possibilities and conditions.

Fourth, the furthering of cooperation between as developed partners as are the majority of CEMA members, will have to be based on improving the monetary-fiscal system. It appears that the cooperative long-term trend programs in their current form are to some degree based on a conviction that there is a possibility to avoid an adjustment of the existing system of international fiscal account within the CEMA framework, possibly by a development of a clearing center type of international exchange. Experience gained in the course of development of cooperative long-term trend programs' projects and actual undertakings give credence to the consideration of such hopes. It appears that this problem will weigh considerably in the processes of implementation and in the results from cooperative long-term trend programs.

Attracting particular attention and differences of evaluations in the cooperative long-term trend program related documents is an /assumption (objective) relating to economic integration of national economy activities/ within the framework of CEMA, needless to say only in selected branches and sectors of material production. At the present time, there are definite difficulties in defining economic integration as a specified state of international economic relations. In relation to specific sectors and branches of industry included by cooperative long-term trend programs to be integrated in a fixed sequence of consecutive activities, those will be composed of several elements. The most important among them will undoubtedly include:

- volume of mutual deliveries of products and services;

- type of mutual relations between the partners;
- type and course of processes evoked among the integrated partner groups by a given fact or occurrence or by a change of economic conditions experienced by one partner.

These elements, and many others whose examination presents a separate problem, form a set of criteria which may be used to evaluate the progress of integration. At the same time a lack of precise criteria precludes formulation of a measurable integration goal and consequently precludes a definition of the extent of derived benefits.

In this situation, the first problem to be solved as we enter the implementation of cooperative long-term trend programs is the scope and effectiveness of individual undertakings. The conduct of whole program evaluations is obviously very difficult and, besides, with a lack of proposals of definite solutions, it could pertain only to the sphere of strategic solutions in the field of developmental politics of the particular sectors and branches of industries of CEMA countries regarded as a whole. Therefore, at the present stage of work on cooperative long-term trend programs, the problem of economic integration of national economic activity within the framework of separate cooperative long-term trend programs, can be viewed only in categories of evaluations pertaining to the scale of individual undertakings which constitute a specific set of technical-technological and organizational activities pertaining to groups of products of spheres of utilization. We can stipulated that a general evaluation of one undertaking would be composed of:

- evaluations of individual implementors (producers);
- evaluations by units of a higher level of management;
- evaluations taking in account the consequences of implementation of undertakings pertaining to the entire industry;
- strategic type evaluations from the point of view of entire national economy.

The choice as to the extent of evaluation would depend on the specifics and the character of the undertakings, their programs and the extent of participation in their implementation.

Another problem which demands a solution in the immediate future is the development of a set of criteria serving to prepare an evaluation of implementation of groups of undertakings and entire programs. Those criteria would have to be classified in two categories: economic and extraeconomic.

The economic criteria must form the main basis for formulation of evaluations of cooperative long-term trend programs. They should be based on an accounting of economic efficiencies of undertakings relative to forecast outlays and the expected results of the activities. Despite the fact that this is a commonly applied procedure, it would be worthwhile here to lay conditions which should be fulfilled with regard to the characteristics of the economic criteria of cooperative long-term trend programs:

- 1) condition of intercomparability in the area of basis and methods used to determine outlays, costs of production and determining prices of products relative to the respective national economies and the entire CEMA;
- 2) condition of unity in applied fiscal methods when calculating the effectiveness of undertakings, equally relative to the respective national economies and the entire CEMA. This means that a formulation of special fiscal methods solely for the purpose of evaluation of needs of undertakings considered within the framework of cooperative long-term trend programs is erroneous because it contradicts the actually existing unity of economic processes on the national and international scale.

An evaluation of economic effects and results of the implementation of undertakings within the framework of cooperative long-term trend programs, cannot be limited to the time frame of a start of activity on a given element of cooperation, but in the majority of cases has to extend for several years. Such an analysis, belonging to long-range studies, should encompass basic economic-technical processes which will develop in the future in a given field, and which can influence the basic parameters of effectiveness. This pertains above all to such elements as interrelations between raw materials conservation, energy conservation and conservation of expenditures as compared to work effectiveness, in direct measurement, and in comparison of these relationships to heretofore achieved production, development of production without participation in implementation of cooperative long-term trend programs and with other branches and sectors of production and other types of activity.

The extraeconomic criteria should pertain to the evaluation of those aspects of implementation of undertakings falling within the cooperative long-term trend programs framework, or concrete programs which constitute conditions or consequences of implementation in their auxiliary functions and activities. By way of an example one can identify: A change of heretofore existing organization of industry, necessity to expand research and development activities, the art of mastering of new technology and production processes, and, in connection with those, an upgrading in the level of qualification, an intensification of marketing, etc. All those changes demand an evaluation, not only from the point of view of eventual outlays (after all they are a component of economic evaluation), but above all from the point of adequacy of the industrial rear base, as well as the system of administration in face with the new tasks.

An extraeconomic analysis should make it possible to evaluate directions and the extent of necessary changes, in comparison to the present, to possibilities, to the needs of remaining sectors of activity of the units which are implementing the cooperative long-term trend programs, and the influence of these changes on future development. The formulation of evaluations within the stated extent is an integral part of a comprehensive evaluation of the implementation of cooperative long-term trend programs. The accuracy of these evaluations would reflect on the quality of the administrative system and the level of managerial cadres of the particular units and elements implementing the cooperative long-term trend programs. The conduct of extraeconomic evaluations is an essentially difficult task which demands much experience and a high level of managerial qualifications. However, for a proper implementation of cooperative long-term trend programs and their further development these activities are indispensable.

FOOTNOTES

1. The author included a detailed description of the minutes of the cooperative long-term trend programs agreements in: "Cooperative Long-Term Trend Programs of CEMA Countries", SPRAWY MIEDZYNARODOWE, 9/1978 pp 28-48; Also: O. Rybakov, "Cooperative Long-Term Trend Programs of CEMA Countries," PLANOVYE KHOZIAISTVO, 8/1976, pp 65-74; J. Kromnov, "Cooperative Long-Term Trend Programs of CEMA Countries," VOPROSY EKONOMIKI, 1/1977 pp 82-90; and a collection of articles dedicated to cooperative long-term trend programs in GOSPODARKA PLANOWA, 10/1978.
2. One can find an indepth analysis of the actual extent of work in the area of cooperative long-term trend programs studies in "Theoretical and Methodological Problems of Complex Achievements and Cooperation in the Area of Planned Activity" Moscow, MIEPSSS, 1977, pp 237-311. It is worth adding that these studies, which are conducted in accordance with recommendations of the CEMA Executive Committee, through the International Institute of Economic Problems of the World Socialist System, and national planning institutes are concentrating on 16 key problems.
3. Compare: Report on meeting of the Executive Committee of the Communist Party of the Soviet Union, 25th Congress of the CPSU.
4. The pressing necessity for working out of a series of questions on cooperative long-term trend programs, and in particular the methodology of common goal programming is indicated by K.F. Katushev, "Great October and the Strengthening of Coexistence of Socialist States" EKONOMICHSKOE SOTRUDNICHESTVO STRAN SEV, M., (Moscow) 6/1977, p. 7.
5. The development and basis of given thesis is presented by: Robert U. Ayres, "Technological Forecasting and Long-Range Planning," McGraw Hill

Book Co., 1969, pp 24-33, 46-70. However, the influence of economic and social factors on the formulation of programming objectives is detailed in: "Analytical Methods in Government Science Policy," OECD, Paris 1971, and: "The Aims and Instruments of Industrial Policy; an Evaluation," OECD, Paris 1975.

6. A detailed analysis of these problems within the context of economy developmental planning is undertaken by: T. Pietrakiewicz, "Programming of Development--Aims and Resources," GOSPODARKA PLANOWA, 12/1977.
7. In preparation of these remarks, the author profited from the results of a productive discussion, and from the results of certain studies conducted by the staff of the Planning Commission to the Council of Ministers and the Planning Institute, connected with the theme: "General Economic Assumptions and Concepts of Cooperative Long-term Trend Programming Development, Implemented within the framework of Scientific Research Studies of Focal Problems 11.6."

9511

CSO: 2600

CEMA MICROBIOLOGICAL INDUSTRY COOPERATION OUTLINED

East Berlin AW DDR AUSSENWIRTSCHAFT in German Vol 8 No 21, 21 May 80 p 12

['Market Information' report by Information and Public Relations Department, GDR Ministry for Foreign Trade: "Microbiological Industry of CEMA Countries"]

[Text] Microbiological synthesis is offering considerable possibilities for the production of protein, amino acids, enzymes and many other biologically active substances. The utilization of these products and of microorganisms themselves in the various sectors of material production is one of the prospects of scientific and technical progress.

The microbiological industry is a recent and rapidly developing branch of the national economy of CEMA [Council for Economic Mutual Assistance] countries. The complex program of socialist economic integration adopted in 1971 determines the long-term trends of the cooperation between CEMA countries even in the field of industrial microbiology.

Agriculture is the sector with the largest needs for microbiological products. Fodder yeasts, amino acids, vitamins, enzymes and antibiotics for non-medical purposes are used to intensify livestock production. In farming, microbiological means are also necessary to protect plants against diseases and pests. These products offer advantages compared to the pesticides now used. The microbiological preparations used are harmless for man and animals and do not have an adverse effect on the environment. Certain types of microbiological products are needed in the foodstuff industry, in the consumer goods industry, in the pharmaceutical industry and in the household chemicals industry.

Tasks and Status of the Microbiological Industry

The need of the national economies of CEMA member countries for microbiological products is increasing steadily; for the moment, it is not possible to satisfy it fully. The scarcity of certain microbiological resources reduces the effectiveness of social production and forces us to import these products from third countries. This is why CEMA member countries must achieve the following tasks in the field of industrial microbiology:

- specialization and cooperation in producing amino acids, vitamins and other feed additives and the elements of which they are made;
- cooperation in producing fodder yeasts using petrochemical raw materials;
- construction of industrial facilities by the countries interested, to produce microbiological products on the basis of maximum and complex utilization of raw material resources.

The measures aimed at organizing the production of feed additives provide in particular for:

- the construction of a factory to produce fodder yeasts, and of a collective combine to produce vitamins A and E in the USSR, in cooperation with the CEMA countries interested;
- the construction of a factory to produce methionine in Poland;
- continued specialization and cooperation in producing feed additives, and an increase in mutual deliveries under bilateral and multilateral agreements;
- scientific and technical cooperation in developing new technologies to produce feed additives, and in improving those already in use.

In 1978, plans to develop the production of microbiological resources over the period 1981-1985 were coordinated. The traditional high-quality protein resources (fish meal, and meat and bone meal, full-cream and skim milk) are in extremely short supply. Because of climatic conditions unfavorable to the cultivation of soybean in the USSR and other CEMA countries, it is impossible to increase the soybean acreage to the extent required. Yet, CEMA countries are not in a position to import soybeans, or regular and coarse soybean meals from non-socialist countries, because livestock production--and therefore food supply--cannot be made directly dependent on the importation of these fodder proteins. As a result, a considerable share of the protein required must be produced by microbiological synthesis. This is why the production of fodder yeasts from the various raw materials available has become one of the main tasks of the microbiological industry of CEMA member countries.

The Microbiological Industry in Selected CEMA Countries

In Bulgaria, fodder yeasts are produced from the hydrolyzates of agricultural waste products. Work is in progress to develop a technology to produce them also from other raw materials. The fodder yeast industry is expected to become efficient between 1985 and 1990. For the future, the expansion of methanol production is planned, and it will be used to produce hydrolytic or biological biomass with a high protein content.

In Czechoslovakia, yeasts are produced from molasses, lignin, slops, synthetic ethanol and from the waste products of citric acid production.

The most important raw materials in Cuba's production of fodder yeasts are molasses and slops. Research on the production of fodder yeasts from sugar cane hydrolyzates (bagasse) has begun.

In Poland, too, fodder yeasts are produced from slops and molasses. At the same time, laboratory work is in progress to develop a technology for the biosynthesis of protein from methanol.

In Romania, fodder yeasts are produced from molasses, slops, lignin and the waste waters from fiberboard production. In the near future, production is expected to begin in a large fodder-yeast enterprise using n-paraffins. Experts are also investigating the possibility of synthesizing protein from methanol.

In the USSR, over 1 million tons of fodder yeasts were produced in 1979. Soviet scientists and experts have accumulated a large amount of experience in this field, and have placed it at the disposal of brother countries to help them solve the problems occurring in the development of their own microbiological production.

In Hungary, molasses and slops are used to produce fodder yeasts. An independent technology was developed to produce yeasts from the waste products of plant and animal fat processing. From 1.0 to 1.2 kilos of fat yield 1 kilo of yeast containing 45 to 50 percent protein.

More Extensive Cooperation

The total fodder yeast production of CEMA member countries should increase by a factor of 1.5 to 2 between 1980 and 1985. But even then, it will still not be possible to cover fully the requirements of individual CEMA countries. To stabilize the fodder base of the GDR, Cuba, Poland and Czechoslovakia, fodder yeast deliveries from the Mosyr (USSR) factory will be increased accordingly. The general agreement covering these was signed by the interested parties in 1979.

CEMA countries are jointly developing new technological processes for the production of fodder yeasts. Experts from the USSR and Czechoslovakia are working to improve the technology of fodder yeast production using synthetic ethanol, the most promising raw material for this production.

Cooperation between the USSR and the GDR takes place to a large extent in the field of microbiological synthesis. Experts from both countries are developing the technology required for the biosynthesis of protein from methanol and natural gas.

In addition to fodder yeasts, amino acids--especially lysine, methionine and tryptophan--are necessary to improve the biological value of fodders.

Lysine is produced from molasses, through microbiological synthesis, in Bulgaria, Rumania and the USSR, and from sugar in Czechoslovakia. At present, the production of lysine from new types of raw materials (ethanol, acetic acid) is being developed.

At present, methionine is produced only in the USSR, through chemical synthesis. Other CEMA countries import methionine from third countries. In this respect, Poland is planning to build a large enterprise for the production of methionine between 1982 and 1984--with the participation of interested CEMA countries. Its production will cover the requirements of the USSR and of the other countries participating in its construction. A draft general cooperation agreement is expected to be prepared in 1980. Poland is preparing the technical and economical base for the construction of this enterprise. The countries interested in cooperating are Bulgaria, Czechoslovakia, the GDR, Poland and Hungary.

Tryptophan is not produced industrially in CEMA countries. Research to this effect is carried out in Hungary and in the USSR. In Hungary, the construction of a large enterprise for the production of this amino acid is under way, in cooperation with interested CEMA countries. At present, CEMA countries' requirements for tryptophan for the years until 1990 are being investigated and specified.

Apart from fodder yeasts and amino acids, various feeding vitamins are required to improve the nutritional value of fodders; these vitamins are obtained by microbiological and chemical synthesis. CEMA countries import these vitamins mostly from third countries. In the coming years, therefore, their production will be significantly expanded and, in 1990, it should be possible to cover fully the requirements of CEMA countries.

In covering the feeding vitamin requirements of brother countries, the agreement signed in 1977 by Bulgaria, Czechoslovakia, the GDR, Yugoslavia, Poland and Hungary, providing for specialization and cooperation in the production of chemical and biochemical feed additives, is of essential importance. This agreement provided for deliveries, until 1980, of vitamin B₄ from the GDR, vitamins B₃, B₆, RR and bacitracin from Poland, vitamin K₃ from Yugoslavia, and vitamin E from Czechoslovakia. Draft protocols have been prepared to extend its period of validity and to include new parties to the contract (Cuba and Romania).

Extensive cooperation between CEMA countries is taking place in the production of enzyme preparations. The USSR and Bulgaria, the USSR and the GDR, the USSR and Czechoslovakia are carrying out bilateral research on the continuous culture of microorganisms, of enzyme producers, the production of fixed enzymes and of purified enzyme preparations for medical uses.

In 1978, CEMA worked out recommendations for the standardization of 4 vitamins. Further work will include the preparation of CEMA standards for fodder yeasts obtained from various raw materials, for amino acids, vitamins and

enzymes for the agriculture and for the production of antibiotics. The rate and status of microbiological production development in CEMA member countries are essentially dependent on the extent to which they are provided with highly productive equipment and means of automation.

The permanent CEMA commission for the chemical industry has already approved, in 1978, the documents prepared by its working organs and refined by the commission, indicating the anticipated need for technological lines and equipments for the microbiological industry during the period 1981-1990, and the technical requirements concerning the parameters of these equipments. These documents have been submitted to the permanent CEMA commission for mechanical engineering to enable it to prepare proposals to satisfy the anticipated requirements.

9294

CSO:2300

LOCALLY PRODUCED STEEL BRANDS DESCRIBED

Sofia RUDNICHAR in Bulgarian 15 May 80 pp 1, 3

[Article by Engr Kosta Kostov: "A Great Scientific and Technical Achievement"]

[Text] In the area of technology, inventions and rationalizations, the Dimitrov Prize commissions under the Bulgarian State Council have opened for discussion the proposal to award the 1980 Dimitrov Award to the following collective: Corresponding Member and Prof Lyubomir Tsonev Kalev, leader, Senior Science Associate First Degree and Candidate of Technical Sciences, Engr Rusi Dobrev Rusev, leader, Senior Science Associate and Candidate of Technical Sciences Tsolo Vulkov Rashev, Engr Velichko Petrov Velichkov, Engr Vladimir Ivanov Dobrinov, Engr Ivan Tenev Ivanov, Engr Lazar Todorov Mintov, Candidate of Technical Sciences and Engr Marin Georgiev Beloiev, Engr Mincho Botev Minchev, Engr Nikolay Ivanov Nikolov and Engr Nikola Borislavov Konstantinov, for comprehensive work in the development of low-alloy, microalloy, nitrided, high-strength and weldable steels.

Simultaneously with developing the production of the classic brands of steel (carbon), our ferrous metallurgy must seek a solution to the problem of developing and supplying the national economy with new steel brands with an improved range of mechanical, technological and operational properties. This has been dictated most by the permanent basic direction of technical progress to lighten metal structures.

The creators on the technical front in this area, in feeling their responsibility, have promptly joined the solution to this major problem. In unison with the trends in world science and in metallurgical practice, they have focused their efforts on working out, developing and introducing new steel brands with increased strength, great resistance to brittle fracture and "fatigue," good weldability and increased resistance to atmospheric corrosion.

The work undertaken under the specific scientific research programs for solving this problem was started in 1970. In applying modern methods in

their thorough research and development activities, and in close cooperation with a broad group of specialists and direct production workers from the shops of the Kremikovtsi and Lenin metallurgical combines, the group of authors were able to work out good technical solutions and bring them to practical realization. A predominant share of these solutions is of an original nature and represents a real contribution to metallurgical practice. Thus the nomenclature of our ferrous metallurgical products has been enriched by two groups of new steel brands: 10G2SAF, 17G2SAF, 30G2SAF, 08G2SAFA and 17G2SAFD, and of the other group, 10G2SF, 09G2B, 09G2B-M, 12G2BF and 08GB.

The first group of steels are low-alloyed, nitrided and high-test; they have been developed by the collective at the Institute for Metal Science and Metal Technology under the BAN [Bulgarian Academy of Sciences] and the V. I. Lenin VMEI [Higher Electrical Machinery Institute] under the leadership of Corresponding Member and Prof Lyubomir Kalev.

The essence of the development of these steel brands consists in the creation of a technology for injecting microadditives of nitrogen into the molten steel, and in improving the appropriate chemical composition in order to obtain a stable structure, high mechanical properties, with suitable plasticity, good weldability, and in some of the steels, also resistance to atmospheric conditions.

In line with the putting of the steels in production, the collective has also worked out and introduced a number of production methods together with specialists from the metallurgical plants.

1) For steel of the 17G2SAF brand, a method for the installation and welding of tanks for petroleum products with a capacity of 50 million liters.

2) For steel of the 10G2SAF brand, a method for producing spiral-welded pipe with a diameter of 711.2 mm, and by this our nation is among the few nations of the world which produce pipe for large-diameter pipelines. Up to the end of last year alone, 16,000 tons of such pipe were delivered to the gas line between the USSR and the south of Bulgaria; this provided a significant savings of foreign exchange.

For using the same steel brand, designs and methods have been worked out for producing freight cars, freight trailers, welded railroad tank cars, and so forth. Methods have also been developed for introducing the nitrided steels into fork-lift and hoist construction. Regular original production of the Bulgarian nitrided ferroalloys has been organized.

Methods have also been introduced for producing cold-resistant steel for use down to -70° . A significant amount of this steel has been exported to the Ust'-Ilmsk Pulp Plant in the USSR.

3) For the steel of the 08G2SAF brand, technical preparations have been completed for the production and export of pipe used in large-diameter pipelines specially for the northern regions of the USSR.

In line with the developments to create nitrided steels and the methods for their use, the group of authors has been issued seven certificates of invention, and another three certificates are in the process of being drawn up for the new brands of this type of steel which have been created in recent years.

The second group of steels is low-alloy, microalloyed, weldable and with an improved range of mechanical, production and operation properties. These have been developed by a collective led by Senior Science Associate First Class, Candidate of Technical Sciences Engr Rusi Rusev from the Metal Science Section under the Institute for Ferrous Metallurgy.

These steels have been developed on the basis of the newest world achievements in this area with the incorporation of a number of original elements such as vanadium, niobium, and so forth. They have an optimized chemical composition, and rational methods which conform to the metallurgical units of our plants are being employed to produce them.

The class of microalloy, weldable steels of the brands 10G2SF, 09G2B, 09G2B-M and 12G2BF have mass use. Using the first of them designed for producing sheet steel up to 30 mm thick, metal structures have been produced at the new shops of the Kremikovtsi SMK [Metallurgical Combine], and mazut tanks with a capacity of 5 million and 10 million liters.

The 09G2B steel has increased strength properties and particularly good resistance to "fatigue." For this reason it is widely used in transport machine building for producing dynamically loaded elements such as freight cars, railroad tank cars, truck trailers, and so forth.

The steel of the 09G2B-M brand (bridge steel) is a thin-sheet steel with very good weldability and increased resistance to brittle fracture. It is employed in bridge building and in industrial and civil construction. It has been used for the northern unit of the Asparukhovi Bridge, the materials handling docking equipment in Burgas and Varna, for certain structural elements in the Maritsa-Iztok complex, and elsewhere. The very good mechanical and technological properties of this steel have been proven in producing the metal structures for the building of the People's House of Culture in Sofia, where up to the end of last year over 4,000 tons had been used. A new brand of steel 12G2BF was developed at the request of the designers and builders of this project for manufacturing the most heavily loaded elements of the metal structures. Already up to 1,000 tons have been used in the structure. With reason it is viewed as a significant technical accomplishment because it is on a level of the world's best for this strength class of steels.

Another modification of this type of steel, the steel brand 09G2B-K has been tested for shipbuilding and certified by the Bulgarian Ship Register. Its introduction into this sector will begin this year.

The steel of the 08GB brand is a fine-grained steel with increased strength and high plasticity. It is very suitable for producing cold-rolled products for the automotive industry. Cold-bent three-dimensional pieces are

produced from it for the Chavdar buses, and previously these pieces were imported from the nonsocialist countries.

The low-alloyed steels with increased strength properties and resistance to atmospheric corrosion of the Korat type for structural elements and the KR-38 type for producing shaped pieces for metal mine frames meet the modern requirements for reducing corrosion losses and expenditures related to manufacturing and maintaining anticorrosion plating. The increased bearing strength and durability of the bell-shaped pieces from the KR-38 steel make it possible to employ metal shoring also for capital works instead of the previously used masonry shoring from concrete blocks. For this reason it is felt with justification that this steel solves an urgent problem in the mining industry.

For three of the steels of this group, certificates of invention have been issued, and a fourth certificate is in the process of being drawn up at the IIR [?Institute for Inventions and Rationalizations].

In conclusion, what criteria can be applied for a comprehensive evaluation of the work done by the group of authors?

First of all, that the two groups of new steel brands developed represent a significant scientific and technical accomplishment by which the groups of authors have solved a major national economic problem. Indicative of the level of the technical solutions is the fact that ten of them have been recognized as inventions. As yet it is too early to make any precise estimates of the direct and multiplier effect which will be realized for the national economy, as the efforts of the developers are presently focused on introducing the new steels in all areas of material production. But at this early stage, as a criterion for an economic evaluation of the results from introducing these steels into practice, one can stress the significant effect which has been realized up to the end of last year. Its material equivalent was expressed in a savings of more than 32,000 tons of steel merely due to a lightening of the metal structures, and over 20 million foreign exchange leva, while the annual economic effect amounted to 16 million leva.

The achievements in developing new brands of our steels are another eloquent example of how the party's decisions for the ever fuller integration of science with production are being carried out in practice.

In view of all this, the proposal of the Ministry of Metallurgy and Mineral Resources, the Ministry of Machine Building, the Ministry of Supply and State Reserves, the Kremikovtsi SMK and the Lenin SMK to present the Dimitrov Award to the developers of the new steels is to the highest degree valid.

DECREE FOR FURTHER DEVELOPMENT OF FERROUS, POWDER METALLURGY

Sofia RUDNICHAR in Bulgarian 15 May 80 pp 1, 2, 3

[Decree of the Bulgarian Council of Ministers No 20 of 22 April 1980 "On the Further Efficient Development of Ferrous and Powder Metallurgy in the Eighth Five-Year Plan and Up to 1990"]

[Text] In pursuit of Decision No 126 of the Politburo of the BCP Central Committee of 24 March 1980 concerning the further efficient development of ferrous and powder metallurgy which has been defined as a strategic area in solving the problem of further satisfying the nation's demand for rolled products and articles from high quality and specialty steels and for cermet products,

The Council of Ministers decrees:

Article 1 (1) The Ministry of Metallurgy and Mineral Resources:

1. During the Eighth Five-Year Plan is to build a new metallurgical combine in the area of Burgas for high quality and specialty steels with a capacity of about 1 million tons annually, including a 300 light-section mill, rolling capacity for the high quality and specialty steels, electric steel casting capacity and direct reduction installations. The combine will be built on a site approved by Order No 62 of the Bureau of the Council of Ministers of 1978. The subprojects are to be erected in stages, as follows: the first stage in 1984, the 300 light-section mill in 1985, and full planned capacity in 1987;
2. To create new capacity for producing 130,000 tons of cold-rolled electrical steel sheet annually with a completion date for the first stage of 1984, and 30,000 tons of annual capacity for cold-rolled stainless sheet with a completion date of 1987. Prior to 30 June 1980, with the approval of the State Planning Committee, a proposal is to be submitted on the territorial location of this capacity;
3. During the Eighth and Ninth Five-Year Plans, a steel pipe plant is to be built in Septemvri, and new shops for 120,000 tons of annual production of hot-rolled pipe, and 21,000 tons annually of cold-drawn pipe;

4. During the Eighth Five-Year Plan to complete the modernization, reconstruction and expansion of the fixed capital at the Kremikovtsei SMK [Metallurgical Combine] and the Lenin SMK in accord with the approved programs for the purpose of providing a full load for their capacity, improving product quality, deepening the degree of processing and introducing waste-free production methods. In 1986, a new mill for high quality shaped structural steel is to be in operation at the Lenin SMK;

5. Prior to 30 September 1980, together with the State Planning Committee, to make a study on the nation's demand for metal cord, microwire and steel strip so that the five-year and annual plans ensure the effective satisfying of this demand mainly by creating optimum-volume capacity with a possibility of effective trade and exports;

6. Before the end of 1980, to study the opportunities for organizing production of graphite electrodes and electrode compound, and prior to 31 March 1980, to submit a proposal for ensuring the nation's demand;

7. In the plan of the Eighth Five-Year Plan to provide the required modernization of the existing plants and to build new capacity for turning out heat-insulating and refractory fibers, light, high-alumina, dolomite and magnesite refractories, unmolded refractories, as well as heat-proof pet-rurgic and devitrified glass products with a maximum use of local raw materials.

Article 2 (1) The Ministry of Electronics and Electrical Engineering, the State Committee for Science and Technical Progress and the State Planning Committee during the Eighth Five-Year Plan and up to 1990 are to provide for the rapid development of the production and use of cermet materials and articles in all areas of the national economy.

(2) The total production of cermet products in 1985 is to reach 20,000 tons, and in 1990, 50,000 tons.

Article 3 (1) The Ministry of Metallurgy and Mineral Resources is to Provide:

1. Prior to 30 June 1981, the technical and economic report on the metallurgical combine for the high quality and specialty steels;

2. Prior to 30 June 1981, a technical and economic report on the capacity for producing the cold-rolled electrical sheet and cold-rolled stainless sheet;

3. Prior to 30 December 1980, a technical and economic report on modernizing, reconstructing and enlarging the Kremikovtsei SMK;

4. Prior to 30 December 1980, changes in the technical and economic report on the Lenin SMK;

5. Prior to 30 December 1981, a technical and economic report on the capacity for metal cord, microwire and steel strip.

(2) The Ministry of Metallurgy and Mineral Resources, the Ministry of Construction and Building Materials, the Ministry of Foreign Trade and the Ministry of Machine Building at the designated times for working out the technical and economic reports are to approve the schedules for the designing, delivery of equipment, construction and operation of the corresponding projects.

(3) The Ministry of Metallurgy and Mineral Resources, as of the fourth quarter of 1980, is to submit the working plans and estimate documents for the 300 mill on the dates corresponding to the approved schedule among the builder and investor, according to the concluded contract for the designing and delivery of equipment from the GDR.

(4) The Ministry of Metallurgy and Mineral Resources, together with the Ministry of Machine Building, the Ministry of Electronics and Electrical Engineering and the Ministry of Construction and Building Materials, are to work out in the technical and economic reports the optimum solutions for the most efficient use of the existing and new capacity, for producing special-made castings, forged pieces, stock, parts, structural elements and metal elements.

(5) In reconstruction, modernization, expansion and new construction, maximum use is to be made of waste-free methods and recirculating water supply systems for the most rational use of the raw materials and conservation of the environment.

(6) Prior to the approval of the technical and economic reports for new capacity, the Bulgarian National Bank, as an exception, is to finance the designing, deliveries, temporary and permanent construction of individual projects using the partial working plans and estimate documents.

(7) The Bulgarian National Bank is to finance the projects related to the further development of ferrous metallurgy in the Eighth Five-Year Plan and up to 1990 and which are being built under foreign plans, using partial estimate documents for not more than 3 months from the receipt of the plans from abroad.

(8) For the subprojects at which work is done under work plans, and the design and estimate documents are submitted at the date stipulated in the preceding paragraph, the schedules for the actual types of work can be drawn up only in terms of the amount of work within a period of 1 month from the receiving of the working plans. Payment for completed types of jobs under these schedules, prior to the submitting of the estimate specifications, is done by advance payment under a bilateral act between the investor and the builder.

Article 4 (1) The Ministry of Electronics and Electrical Engineering and the State Planning Committee in the 1981 plan are to include the start of construction on the first stage of the expansion, modernization and reconstruction of the cermet products plant in Svidnya in Sofia Okrug, and the utility building of the Cermet Institute in Sofia.

(2) The Ministry of Electronics and Electrical Engineering prior to 31 December 1980 is to provide the necessary design and estimate specifications for the portion of construction to be completed in 1981, and prior to 30 June 1981, the technical and economic reports for the projects in the preceding paragraph.

(3) In 1981, the Bulgarian National Bank is to open up construction financing according to partial design completion.

(4) The Ministry of Electronics and Electrical Engineering and the Ministry of Machine Building prior to 30 September 1981 are to approve the technical and economic reports for the projects related to the accelerated development of powder metallurgy and which are to be built in the Eighth Five-Year Plan.

Article 5. The Ministry of Metallurgy and Mineral Resources, in agreement with the State Planning Committee and the Ministry of Foreign Trade, are to provide for a renewal and expansion of the physical plant in the annual plans of the Metalurgproekt KIPP [Interdisciplinary Institute for Study and Design of the Metallurgical Industry] and the Institute for Ferrous Metallurgy during the period of 1981-1985. Equipment is to be supplied exclusively by complete deliveries.

Article 6. The Institute for Ferrous Metallurgy as of 1 April 1980, is to be transferred from the Kremikovtsi SMK to direct subordination under the Ministry of Metallurgy and Mineral Resources for the purpose of ensuring the comprehensive scientific servicing of all the economic organizations and enterprises in ferrous metallurgy in accord with the new tasks.

Article 7 (1) The Ministry of Foreign Trade and the Ministry of Metallurgy and Mineral Resources in 1980-1981 are to conclude contracts with the USSR and the other socialist countries as well as with the leading firms of the nonsocialist nations for designing, technical assistance and the delivery of equipment and metal structural elements.

(2) The contracts are to provide for cooperation in the production of equipment with the involvement of our country.

Article 8 (1) The Ministry of Metallurgy and Mineral Resources, along with the complete utilization of secondary metals, is to:

1. Expand geological prospecting for iron ores and for raw materials for ferroalloys and refractories;

2. In 1985-1986, put into operation a mine and dressing mill based upon the iron ore deposit near the village of Dryanovo in Yambol Okrug;

3. During the Eighth Five-Year Plan begin rapid construction of the mining and processing metallurgical combine in Obrochishte of Tolbukhin Okrug, as well as capacity for producing small amounts of special ferroalloys and inoculents;

4. During the Eighth Five-Year Plan build the Gruncharitsa mining and processing combine.

(2) The Committee for Architecture and Urban Development, the Ministry of Metallurgy and Mineral Resources and the corresponding executive committees of the okrug people's councils are to carry out the necessary land usage studies for carrying out these tasks.

Article 9. The State Planning Committee, the Ministry of Foreign Trade and the Ministry of Metallurgy and Mineral Resources, prior to 30 December 1980, are to conclude long-term agreements with the USSR and other countries for delivering starting in 1984 iron-containing raw materials suitable for direct reduction.

Article 10. The Ministry of Supply and State Reserves and the Ministry of Metallurgy and Mineral Resources, together with the Ministry of Machine Building, the Ministry of Electronics and Electrical Engineering, the Ministry of Construction and Building Materials and the other consumers of metal, by the end of 1980, are to work out an optimum standardized nomenclature and other standards for the metals produced and consumed in the nation from the standpoint of reducing sharply the number of used types and sizes and metal consumption.

Article 11 (1) The Ministry of Construction and Building Materials, the Ministry of Transport, the Ministry of Metallurgy and Mineral Resources and the Executive Committee of the Burgas Okrug People's Council, with the agreement of the State Planning Committee during the fourth quarter of 1980, are to begin building the production-technical and service facilities for the construction-installation organizations, the transport links and preparation for the building of the combine for high quality and specialty steels in Burgas.

(2) The Ministry of Construction and Building Materials and the Ministry of Metallurgy and Mineral Resources, with the agreement of the State Planning Committee, prior to 30 May 1980, are to clarify the required funds needed for the production, technical and service facilities and for construction mechanization and which are to be spent prior to the approval of the technical and economic report.

(3) The Ministry of Construction and Building Materials prior to 1982 is to expand and modernize capacity for producing metal structural elements in the region of Burgas, and before the end of 1981, is to complete the construction of the housing construction combine in Burgas.

Article 12. The Ministry of Metallurgy and Mineral Resources, the Ministry of Construction and Building Materials, the Central Council of the National Agroindustrial Union, the Committee on Architecture and Urban Development, and the Executive Committee of the Burgas Okrug People's Council, prior to 30 June 1980, are to provide, according to the procedure stipulated in the law governing the Protection of Cultivated Land and Pastures, the necessary terrain for basic and temporary construction, the material and technical facilities for construction, the land along the route of the transport ties and energy supply, a barracks area, and so forth.

Article 13. The Ministry of Metallurgy and Mineral Resources, prior to 30 July 1980, is to turn over to the Ministry of Construction and Building Materials the plans for the approximate vertical layout of the basic and auxiliary site. The working plans for temporary power supply, water supply and roads are to be submitted prior to 30 September 1980.

Article 14. The Ministry of Transport, prior to the end of 1985, is to design and build new wharves at the Burgas bulk cargo port for receiving vessels of optimum tonnage in importing the iron-containing raw materials, as well as the breakwaters. The State Planning Committee in the Eighth Five-Year Plan is to provide the required funds for the designing, delivery of equipment and construction-installation work specifically for the Ministry of Transport.

Article 15 (1) The Ministry of Construction and Building Materials, the Committee for Labor and Wages, the Ministry of Transport and the Executive Committee of the Burgas Okrug People's Council are to provide the necessary servicemen from the Main Directorate of the Construction Troops and from the Railroad Troops at the expense of other projects, and these troops are to be involved in the building of the new metallurgical combine.

(2) The Ministry of Construction and Building Materials, together with the Ministry of Public Education, the Committee for Labor and Wages and the Executive Committee of the Burgas Okrug People's Council, with assistance from the Komsomol Central Committee, are to organize the recruitment and training of 3,000 young persons in the secondary vocational technical schools and in the vocational training centers of Komsomol recruitment. In 1982 these young persons are to go to work in the construction and installation organizations erecting the combine.

Article 16 (1) The Ministry of Metallurgy and Mineral Resources, the Ministry of Public Education, the Committee for Labor and Wages, the Ministry of Construction and Building Materials, the Ministry of Transport and the Executive Committee of the Burgas Okrug People's Council, prior to 30 July 1980, are to approve an integrated specific program for the recruitment and training of the personnel required for the designing, construction and operation of the new metallurgical combine in Burgas.

(2) The Committee for Labor and Wages is to approve an annual plan for the recruitment of personnel for the designing, construction and operation of the combine, including from other okrugs.

Article 17. The Committee for Architecture and Urban Development and the Executive Committee of the Burgas Okrug People's Council, with the agreement of the Ministry of Metallurgy and Mineral Resources, prior to 30 June 1980, are to draw up a territorial use plan, and by the end of 1981, to work out urban development and architectural plans for the territories related to the production activities and accompanying construction at the Burgas combine for quality and specialty steels.

Article 18. The State Planning Committee and the Executive Committee of the Burgas Okrug People's Council, in working out the plans for the Eighth and Ninth five-year plans, are to provide for the development of activities in Burgas Okrug to ensure further employment of the female labor force.

Article 19. Or 1 May 1980, under the Ministry of Metallurgy and Mineral Resources, a self-financing metallurgical combine is to be formed with headquarters in Burgas, with the following activities: the production of rolled products and articles from high quality and specialty steels. The combine is to coordinate and support the investment process.

Article 20 (1) A National Coordinating Council is to be set up for powder metallurgy under the State Committee for Science and Technical Progress; representatives from all the involved ministries and other departments will participate on the council.

(2) The National Coordinating Council is to supervise the fulfillment of the program for the development of powder metallurgy by the ministries and other departments.

(3) The chairman of the State Committee for Science and Technical Progress is to approve the membership of the Coordinating Council.

(4) The Ministry of Electronics and Electrical Engineering, the Ministry of Machine Building, the Ministry of Metallurgy and Mineral Resources and the Ministry of Chemical Industry are to ensure the production of the machinery, installations, materials and production methods for powder metallurgy following the nomenclature given in the appendix.

Article 21 (1) The State Planning Committee, the Ministry of Finances, the Ministry of Metallurgy and Mineral Resources, the Ministry of Construction and Building Materials, the Ministry of Transport, the Ministry of Public Health, the Ministry of Communications and the Executive Committee of the Burgas Okrug People's Council, in the plan for the Eighth and Ninth five-year plans, are to provide the necessary resources for building the new production capacity, the production and technical facilities for construction, housing, dormitories, roads, railroad lines, communications lines and installations, health, cultural, sports and other facilities and installations of the infrastructure related to the social, domestic and cultural services of the persons involved in the construction and operation of this capacity.

(2) The Ministry of Electronics and Electrical Engineering, the Ministry of Machine Building and the State Committee for Science and Technical Progress, together with the State Planning Committee, during the Eighth Five-Year Plan, are to provide the necessary resources for the production, scientific research and development activities and the foreign exchange in hard currencies for purchasing licenses in the area of the production of metal powders and products in accord with the demand for the accelerated development of powder metallurgy on the basis of the most recent achievements of technical progress.

Article 22. In the aim of accelerating the reconstruction and modernization of the Bl. Popov Production Combine in Pernik:

1. The Bulgarian National Bank, prior to the approval of the technical and economic report on the combine, within the period up to 30 December 1980, is to finance its construction under partial work plans and estimate specifications;

2. It is to permit the inclusion of the affiliate of the Institute for Metal Science and Metal Technology in the general estimate for the project "Reconstruction and Modernization of the Bl. Popov Production Combine in Pernik," and as an exception to carry out its construction as a nonproduction project.

Concluding Provisions

1. In Point 6 of the general and supplementary provisions of the Unified Personnel Table as approved in the Decree No 50 of the BCP Central Committee and the Council of Ministers of 1979, after the words "for the Kremikovtsi Metallurgical Combine," the words "and the Burgas Metallurgical Combine" are to be added.

2. In Article 35, Point 3, Letter "a" of the Ordinance Governing Additional Labor Remuneration for Hazardous and Other Specific Working Conditions" (promulgated in DUFZHAVEN VESTNIK, No 19 of 1977, amended and supplemented in Nos 32 and 96 of 1977, No 82 of 1978, and Nos 32 and 38 of 1979), after the words "Lenin Metallurgical Combine" the words "Burgas Metallurgical Combine" are to be added.

3. In Article 2, Paragraph 1, Point 32 of the Ordinance Governing the Temporary Restriction on the Admitting of New Residents to Cities (promulgated in DUFZHAVEN VESTNIK, No 94 of 1974, amended and supplemented in Nos 45 of 1975, Nos 1, 8, 15, 29, 32, 65, 66 and 77 of 1976, Nos 4, 9 and 38 of 1977, Nos 69 and 74 of 1978, and No 52 of 1979), after the words "Petrochemical Combine," the words "and the Metallurgical Combine," are to be added.

4. The workers, specialists and white collar personnel involved in the designing, investing, construction and production activities of the Burgas Metallurgical Combine who are not residents of Burgas, in determining the

amount of rent which must be paid as renters of state and departmental housing, are to be considered as lacking personnel in the sense of Paragraph 16a, Point 3 of the Rental Rates for Housing and Quarters and Places Assigned for Economic and Administrative Needs (promulgated in DURZHAVEN VESTNIK, No 49 of 1970, amended and supplemented in Nos 50 and 91 of 1973, No 85 of 1974, and No 18 of 1979).

5. The departments, economic organizations and institutions, not including the Ministry of National Defense, the Ministry of Internal Affairs, and the economic organizations which are given such a right, under Article 29, Letter "1" of the Labor Code, are to release persons who wish to go to work in the designing, construction and operation of the Burgas Metallurgical Combine.

6. The Burgas Metallurgical Combine is to be included in the list of projects approved in Appendix 4 of the Decree No 56 of 22 December 1979.

7. Article 23, Paragraph 4 of the Decree No 5 of the BCP Central Committee and Council of Ministers of 1977 (promulgated in DURZHAVEN VESTNIK, No 19 of 1977, amended and supplemented in No 96 of 1977 and No 82 of 1978) is to be supplemented, in adding to the end the words "and those employed in powder metallurgical production."

8. The subject of activities of the Scientific Production Combine for Powder Metallurgy (DURZHAVEN VESTNIK, No 29 of 1978) is to be supplemented with the words "design and engineering activities."

9. The Order No 41 of the Bureau of the Council of Ministers of 11 July 1978 is repealed.

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PREFACE, TABLE OF CONTENT OF STATISTICAL GUIDE LISTED

Sofia STATISTICHESKI SPRAVOCHNIK in Bulgarian 1980 pp I-XX

[Text] Committee for Unified Social Information System of the Council of Ministers

'Statisticheski Spravochnik' [Statistical Guide] 1980

Sofia, 1980

Statistical Guide offers the Bulgarian public information characterizing the development of the National Economic Complex and the living standard of the people in the period of building a socialist society. The statistical data outlines the structural changes in the country's economy, and the high and stable rates of growth of public production and of the country's social and cultural development.

The bulk of the data covers the 1970-1979 period while the consolidating statistical characteristics have been compared with 1939, 1948, 1952, 1956, 1957, 1960, and 1965 as well.

The Statistical Guide provides information on the development of the okrugs in 1979.

Also provided are comparative data for some countries.

The data for last year are preliminary and shall be refined in the subsequent publications of the Committee for the Unified Social Information System.

Table of Content

	Page
Preface	III
Content of Tables	V
Abbreviations and Symbols	XVI
Methodology Notes	XVIII

National Economic Complex

I. Basic Data on the Country's Economic Development	2
II. Science and Technical Progress	63
III. Industry	81
IV. Construction	108
V. Agriculture	112
VI. Transportation	145
VII. Communications	151
VIII. Foreign Economic Relations	153

Population and Living Standard

I. Basic Data on the Living Standards of the People	174
II. Population	176
III. Income	183
IV. Consumption	192
V. Population Services	202
VI. Living Environment	217
VII. Education and Culture	223

International Review

I. Territory and Population	245
II. Industry	253
III. Agriculture	265
IV. Transportation	282
V. Trade	285
VI. Education	288
VII. International Tourism	290

Content of Tables

National Economic Complex

	Page
1. Basic Data on the Country's Economic Development	
1. Basic Data on the National Economy	2
2. Average Annual Growth Rate of Basic Indicators by Five-Year Plan	14
3. Area, Output, and Average Yields of Basic Farm Crops in All Farm Categories by Period	16
4. Employed Individuals by Sector	20
5. Workers and Employees by Sector	22
6. Women Workers and Employees on 1 August by Sector	24

7. Share of Women in the Overall Number of Workers and Employees in Industrial Enterprises on 1 August by Sector	28
8. Administrative-Management Personnel in the National Economy on 1 August	30
9. Specialists With Higher Education on 1 November by Sector	30
10. Specialists with Semi-High Education on 1 November by Sector	31
11. Specialists with Secondary Specialized Education on 1 November by Sector	32
12. Specialists with Higher Education on 1 November by Basic Skill and Sex	33
13. Specialists with Higher Education on 1 November 1979 by Age, Sex, and Skill Group	34
14. Workers and Employees and Specialists with Higher, Semi-Higher, and Secondary Specialized Education in 1979 by Okrug	36
15. Workers and Employees Graduates of Courses for Acquiring Skills and for Upgrading Skills	38
16. Workers and Employees Graduates of Courses for Skills and for Upgrading Skills by Sector	38
17. Productive Capital in the National Economy	40
18. Capital Investments by Form of Ownership	41
19. Capital Investment Indicators	42
20. Capital Investments by Technological Structure	44
21. Capital Investments by Sector	46
22. Capital Investments by Sector and Five-Year Plan	48
23. Capital Investments in 1979 by Okrug	50
24. Installed Productive Capital by Sector and Five-Year Plan	51
25. Installed Productive Capital by Sector	53
26. Public Product and National Income by Sector	55
27. Indicators of Public Product and National Income	56
28. National Income Indicators by Sector	60
29. National Income Indicators by Individual Employed in Material Production	60
30. Structure of the Absolute Annual Growth of the National Income by Factor	60
31. Indicators of the Accumulation and Consumption Funds	61

32.	Structure of Utilized National Income	62
33.	National Income Per 100 Leva Productive Capital by Basic Sector	62
11.	Science and Technical Progress	
1.	Organizations for Scientific Services and Application and Scientific Workers on 31 December	63
2.	Individuals Employed in Science and Scientific Services by a Category of Personnel	63
3.	Scientific Workers on 31 December by Scientific Branch	63
4.	Scientific Workers on 31 December by Scientific Title and Degree	64
5.	Postgraduate Students in Higher Educational Institutions and Scientific Research Institutes at Home and Abroad	65
6.	Topics and Problems Developed for Practical Utilization	64
7.	Applied Scientific and Technical Achievements by Type of Development and Research	65
8.	Applied Scientific and Technical Achievements in Production Rated in the Superior Quality Category with Grade "K" by Type of Development and Research	65
9.	Applied Scientific and Technical Achievements in Production with a Quality Assessment of First Category with Grade "I" by Type of Development and Research	66
10.	Applied Scientific and Technical Achievements in Production by Form of Implementation	66
11.	Intention and Rationalization Movement	67
12.	Basic Indicators Characterizing Scientific Organization of Labor in Industry	69
13.	Brigade Organization of Labor of Workers in Industry	71
14.	Capital Investments for Modernization, Reconstruction, and Expansion, by Sector	72
15.	Share of Funds for Modernization and Reconstruction of Basic Productive Capital of the Capital Investments in Material Production by Sector	73
16.	Indicators of Capital-Labor, Machine-Labor, and Electric Power-Labor Ratios Per Individual Employed in Material Production by Sector	74

17.	Electric Power Used in National Economic Sectors	75
18.	Electric Power Used Per 100 Leva Overall Industrial Output in State and Cooperative Industrial Enterprises	75
19.	Power-Labor and Electric Power-Labor Ratio of Industrial-Production Workers in State and Cooperative Industrial Enterprises	76
20.	Percentage of Newly Produced and Improved Industrial Output of the Total Commodity Output Produced	76
21.	Mechanization of Operations in Industry	77
22.	Chemization of the National Economy	78
23.	Intensification of Agriculture	79
24.	Electrified Railroad Lines and Electric and Diesel Traction in Railroad Transportation	79
25.	Mechanization of Operations in Water Transport	80
26.	Mechanization of Basic Operations in Construction	80
III. Industry		
1.	State and Cooperative Industrial Enterprises	81
2.	Workers and Employees in State Industrial Enterprises by Sector and in Cooperative Industrial Enterprises	82
3.	Shift Coefficient of Industrial Production Workers in State and Cooperative Industrial Enterprises by Sector	86
4.	Utilization of the Working Time of Industrial Production Workers in State and Cooperative Industrial Enterprises	86
5.	Industrial Production Capital in State Industrial Enterprises by Sector and in Cooperative Industrial Enterprises	87
6.	Shift Coefficient of Basic Equipment in Some Industrial Sectors	88
7.	Use of the Calendar Time of Basic Equipment in Some Industrial Sectors	90
8.	Capital Investments in Industry by Sector and Five-Year Plan	91
9.	Overall Production Indicators for the Entire Industry	92
10.	Indicators and Structure of the Overall Output of the Entire Industry by Economic Group and Sector	94

11. Indicators and Structure of the Overall Output of State Industrial Enterprises by Sector and of Cooperative Industrial Enterprises	96
12. Indicators of the Overall Output of State and Cooperative Industrial Enterprises by Okrug	98
13. Production of Some Types of Industrial Commodities	99
14. Indicators of Labor Productivity in State Industrial Enterprises by Sector and of Cooperative Industrial Enterprises	106
IV. Construction	
1. Workers and Employees	108
2. Basic Types of Construction Machinery	108
3. Indicators of Overall Construction Output	109
4. More Important Production Capacities Completed by Five-Year Plan	110
5. Cultural-Public Services Construction by Five-Year Plan	111
6. Labor Productivity	111
V. Agriculture	
1. Basic Indicators Characterizing Agroindustrial Complexes	112
2. Basic Indicators Characterizing State Seed Production Farms of the Quality Seeds and Planting Materials NPO [Scientific Production Trust]	114
3. Basic Indicators Characterizing the Fattening Combines of the Rodopa DSO [State Economic Trust]	115
4. Basic Indicators Characterizing the Poultry Breeding NPO	116
5. Basic Indicators Characterizing the NPO in Hog Breeding	117
6. Material and Technical Base	118
7. Indicators of Overall Agricultural Output	120
8. Structure of Overall Agricultural Output by Sector	124
9. Indicators of Labor Productivity in Agriculture	124
10. Cultivated Farm Land by All Farm Categories	125
11. Cultivated Farm Land by Agricultural Organizations and Branches	125

12. Areas in Some Farm Crops in All Farm Categories	126
13. Areas Planted in Some Farm Crops by Agricultural Organizations and Branches	127
14. Areas Planted in Some Farm Crops in All Category Farms in 1979 by Okrug	128
15. Output of Some Farm Crops by All Farm Categories	129
16. Output of Some Farm Crops by Agricultural Organizations and Branches	130
17. Output of Some Farm Crops by All Farm Categories in 1979 by Okrug	131
18. Average Yields of Some Farm Crops in All Farm Categories	132
19. Average Yields of Some Farm Crops in Agricultural Organizations and Branches	133
20. Average Yields of Some Farm Crops in All Farm Categories in 1979 by Okrug	134
21. Irrigated Areas in All Farm Categories	135
22. Irrigated Areas in Agricultural Organizations and Branches in 1979 by Okrug	135
23. Livestock in All Farm Categories on 1 January	136
24. Livestock in Agricultural Organizations and Branches on 1 January	136
25. Livestock in All Farm Categories on 1 January 1980 by Okrug	137
26. Animal Husbandry Products in All Farm Categories	138
27. Animal Husbandry Products in Agricultural Organizations and Branches	138
28. Animal Husbandry Products in Agricultural Organizations and Branches in 1979 by Okrug	139
29. Livestock Productivity in All Farm Categories	140
30. Livestock Productivity in Agricultural Organizations and Branches	140
31. Livestock Productivity in Agricultural Organizations and Branches in 1979 by Okrug	141
32. Per Capita Output of Some Farm Products by Five-Year Plan	142
33. Purchased Agricultural Commodities	144

VI. Transportation

1. Workers and Employees	145
2. Freight Hauled by Type of Transport	146
3. Passengers Carried by Type of Transport	148
4. Labor Productivity by the Public Use Transportation System	150

VII. Communications

1. Telegraph and Telephone Network	151
2. Radiofication and Television	152

VIII. Foreign Economic Relations

1. Foreign Trade	153
2. Foreign Trade Indicators	154
3. Export of Productive Capital and Consumer Goods	160
4. Import of Productive Capital and Consumer Goods	161
5. Export of Industrial and Agricultural Commodities	162
6. Exports and Imports by Group of Countries	163
7. Number of Countries with which Bulgaria Maintained Trade Relations	164
8. Exports of Some Commodities	164
9. Import of Some Commodities	166
10. Foreign Visitors to Bulgaria by Country	168
11. Foreign Visitors to Bulgaria in 1979 by Country and Purpose of Visit	169
12. Bulgarian Visitors to Other Countries	170
13. Bulgarian Visitors of Other Countries in 1979 by Country and Purpose of Visit	171

Population and Living Standard

1. Basic Data on the People's Living Standard	
1. Basic Data on the Living Standards of the People	174

II. Population

1. Population According to Some Censuses	176
2. Average Annual Population and Population on 31 December	177
3. Population on 31 December 1979 by Age and Sex	179
4. Population, Territory and Population Density in 1979 by Okrug	179
5. Marital Status, Birth Rate, Mortality Rate, and Natural Population Growth and Infant Mortality	180
6. Marital Status, Birth Rate, Mortality Rate, and Natural Growth of the Population in 1979 by Okrug	181
7. Average Life Span of the Population in Individual Periods	182

III. Income

1. Consumption Fund	183
2. Consumption Fund Indicators Per Capita	183
3. Nominal and Factual Wage of Workers and Employees	184
4. Average Annual Wage of Workers and Employees by Sector	185
5. Average Annual Wage of Workers and Employees in State Industrial Enterprises by Sector and in Cooperative Industrial Enterprises	186
6. Average Annual Wage in Construction	189
7. Average Annual Wage Per Capita in Transport Activities by Type of Transport	189
8. Indicators of Real Per Capita Income	189
9. Social Consumption Funds Per Capita	190
10. Pensions	190
11. Aid by Type	190
12. Scholarships Paid	191

13. Total Income of Observed Households by Social Group	191
IV. Consumption	
1. Total Expenditures of Observed Households by Social Group	192
2. Per Capita Consumption of Some Comestible and Noncomestible Products	193
3. Retail Trade Indicators	194
4. Comestible and Noncomestible Goods Sales in Retail Trade	194
5. Retail Trade by Type of Activity and Place of Sale	195
6. Retail Trade in 1979 by Okrug	196
7. Retail Sales of Some Commodity Groups	197
8. Per Capita Retail Sales of Some Commodity Groups	199
9. Indicators of State Retail Prices	201
10. Indicators of State Retail Prices by Commodity Group	201
V. Population Services	
1. Stores, Kiosks, Canteens, Stalls, and Public Catering Institutions in Retail Trade on 31 December by Type	202
2. Stores, Kiosks, Canteens, Stalls, and Public Catering Institutions in Retail Trade on 31 December in Cities and Villages	203
3. Density of Stores, Kiosks, Canteens, Stalls, and Public Catering Institutions on 31 December	203
4. Useful Area of Stores and Public Catering Institutions per Capita	203
5. Population Trade Services	204
6. Industrial Population Services per Capita	204
7. Price Indicators of Some Population Services and Fees	205

8. Water Supply	206
9. Urban Sewer System	206
10. Electrification	207
11. Settlements Supplied With Electric Power and Water Mains at the End of 1979 by Okrug	208
12. Public Baths	208
13. Hotels	209
14. Planted Areas in the Cities	209
15. Public Laundries	210
16. Barber Shops and Beauty Shops	210
17. Communal-Consumer Population Services	211
18. Per Capita Electric Power Consumption	211
19. Transportation and Communications Population Services	212
20. Health Network	213
21. Emergency Medical Aid Stations	214
22. Nurseries and Consultations for Women and Children	214
23. Children's Kitchens	215
24. Social Care Institutions	215
25. Medical Personnel	215
26. Medical Services to the Population	216
27. Places in Nurseries Per 10,000 Children Under Three Years of Age	216
28. Rest Homes	216
VI. Living Environment	
1. Capital Investments for the Preservation and Restoration of the Environment	217

2. Expenditures for Environmental Protection Not Considered Capital Investments	218
3. Protected Natural Sites in 1979	218
4. Protected Natural Sites on 31 December 1979 by Okrug	219
5. Housing Resources	221
6. Built Housing	221
7. Built Housing by Five-Year Plan	222
8. House Saving Deposits	222
9. Availability of Durable Goods per 100 Households	222
VII. Education and Culture	
1. Kindergartens	223
2. Children in Kindergartens per 1,000 Children Aged From Three to Six	223
3. Educational Institutions, Teachers, and Students	224
4. Educational Institutions, Teachers, and Students in 1979-1980 School Year by Okrug	226
5. Students	227
6. Students per Teacher and per Classroom	227
7. Students Attending Vocational Technical Schools	228
8. Students Attending Secondary Vocational Technical Schools	228
9. Students Attending Technical Schools and Art Schools	229
10. University Students in Semi-Higher Institutes and Higher Educational Institutions	230
11. Students per 10,000 Population	231
12. Last Year Secondary Students and University Students in Semi-Boarding Schools, Boarding Schools, and Hostels	231
13. Graduates	232

14. Scholarship Students	234
15. Theaters	234
16. Music Groups and Amateur Art Collectives	234
17. Movie Theaters	235
18. Reading Rooms	235
19. Libraries	236
20. Publishing	236
21. Activities in Culture Houses	237
22. Personnel in Culture Houses on 31 December	238
23. Cultural Workers Clubs	238
24. Television Programs	239
25. Television Programs by Function	239
26. Radio Programs by Purpose and Function	240
27. Theaters, Movie Theaters, and Museums in 1979 by Okrug	241
28. Cultural Services to the Population	242

International Review

I. Territory and Population

1. Territory and Population on Earth by Continent	245
2. Territory, Population, and Population Density and Capitals of Some Countries	246
3. Birth and Mortality Rates and Natural Population Increase	250
4. Infant Mortality	251
5. Physicians	252

II. Industry	
1. Indicators of Overall Industrial Output	253
2. Electric Power	254
3. Coal	255
4. Crude Oil	256
5. Cast Iron and Ferroalloys	257
6. Steel	258
7. Nitrogen Fertilizers	259
8. Sulfuric Acid	260
9. Cement	261
10. Cotton Fabrics	262
11. Woolen Fabrics	263
12. Per Capita Production of Some Industrial Commodities in 1978	264
 III. Agriculture	
1. Indicators of Overall Agricultural Output	265
2. Wheat	266
3. Corn	268
4. Tobacco	270
5. Sugar Beets	271
6. Tomatoes	273
7. Grapes	275
8. Cattle	277
9. Sheep	278
10. Hogs	279

11. Per Capita Production of Some Agricultural Commodities in 1978	280
IV. Transportation	
1. Work Accomplished by Railroad Transportation	282
2. Maritime Commercial Fleet	284
V. Trade	
1. Imports and Exports	285
2. Retail Trade Indicators	286
3. Consumer Price Indicators	287
VI. Education	
1. Students	288
VII. International Tourism	
1. Tourists in Various Countries	290

Abbreviations and Symbols

APK = Agroindustrial Complex

br = number

val = Foreign Exchange

inkl = including

vm = capacity

v t. ch. = including

VUZ = Higher Educational Institution

GDR = German Democratic Republic

g. = year

gr. = city
 GFR = German Federal Republic
 DZS = State Farm
 dka = decare
 dm² = square decimeter
 DSO = State Economic Trust
 zh. p. = railroad
 kva = kilowatt ampere
 kvt = kilowatt
 kvch = kilowatt hour
 kg = kilogram
 km = kilometer
 km² = square kilometer
 k.s. = horsepower
 l = liter
 lv. = leva
 m = meter
 m² = square meter
 m³ = cubic meter
 m/g. = meters per year
 mln = million
 mm = millimeter
 NOT = Scientific Organization of Labor
 NTS = Scientific and Technical Cooperation
 OON = United Nations Organization
 PAO = Industrial-Agrarian Trust
 p./km = passenger/kilometer
 SASht = United States
 SD = Economic Directorate
 SEP = Construction-Exploitation Enterprise
 c.i.f. = cost, insurance, freight
 SMR = Construction-Insulation Work

sr. god. br. = average annual number
 SSSR = Union of Soviet Socialist Republics
 t = ton
 t/g. = ton/year
 t/km = ton/kilometer
 t/24 ch. = tons per 24 hours
 TKZS = Labor Cooperative Farm
 TPK = Labor Production Cooperative
 TT = Telegraph and Telephone
 FZTs = Factory-Plant Price
 f.o.b. = free on board
 kh. (khil.) = thousands
 chf = pair
 ch./ch. = man/hour
 YuAR = Republic of South Africa
 . = no data
 - = no case
 0 = figure below one-half of the measurement unit used
 % = percent.

Methodology Notes

The absolute data in value terms included in the present publication are based on prices for the corresponding year.

Before 1960 the indicators were computed on the basis of absolute data of comparable prices valid until 1961; starting with 1960 they were computed on the basis of prices on 1 January 1962 and are linked with the indicators computed on the basis of comparable prices effective until 1961. After 1971 the indicators are computed on the basis of 1 January 1971 prices and are linked with indicators computed on the basis of comparable prices on 1 January 1962. The indicators for the public product, national income, accumulation fund, consumption fund, and overall construction output through 1962 are computed on the basis of 1957 prices; after 1962 they are computed on the basis of 1 January 1962 prices and after 1971 on the basis of 1 January 1971 prices and are linked with the computed indicators based on 1957 and 1962 prices. The chain indicators (1970 in terms of 1969) are computed on the basis of comparable data; 1969 has been made comparable with 1970. All 1970

indicators computed for the corresponding years and considered as bases were obtained through a chain correlation with the 1970 index in terms of 1969.

Indicators expressing the 1970 structure were computed on the basis of 1 January 1962 prices; those of 1975 were computed on the basis of 1 January 1971 prices.

The structure of the national income used through 1962 is computed on the basis of comparable prices for 1957; after 1962, on the basis of prices on 1 January 1962; for 1975-1978, on the basis of prices on 1 January 1971; for 1979, on the basis of the prices for the corresponding year.

The absolute amounts of the social product, national income, and consumption fund, as well as the indicators deriving from them (per capita, structures, breakdown of the growth by factor, etc.), starting with 1970, are different in terms of the coverage of the absolute data, compared with the same indicators of the previous years. Starting with 1970 the material production area includes transportation and communications activities servicing the population and the nonproduction area and unsuccessful geological surveys. The scope of "other material production sectors" was broadened, i.e., population activities in meat production, fruit and vegetable canning (excluding pickling), the production of soap and sewing and domestically made fabrics, and activities of enterprises purchasing secondary raw materials from enterprises, establishments, and organizations have been included as well.

Starting with 1977 enterprises, establishments, and organizations have computed the amortization rate as an element of material outlays on the basis of new amortization norms and the value of productive capital, reduced to current value as the result of the general inventory taking and reevaluation conducted on 31 December 1974. As a result of this, as an element of material outlays, amortization has increased their overall volume and lowered the amount of the national income produced.

The absolute amounts of fixed capital, national income, and accumulation fund, as well as the indicators derived from them (per capita, per employed person in material production, breakdown of growth by factors and structures, and so on), starting with 1977, have been methodologically different from the absolute data of the same indicators in previous years. The chain indicators (1977 in terms of 1976) have been computed on the basis of comparable data and the figures for 1976 have been made consistent with 1977. All 1977 indicators, computed for the corresponding years considered as the base, were obtained by linking them with the 1977 to 1976 indicator.

Starting with 1977 seeds and feeds domestically produced and included in agricultural output have been assessed on the basis of production costs rather than average marketing price. This has had a certain influence on the overall output and on material outlays in agriculture, based on prices for the corresponding year.

The value indicators for foreign trade are based on prices for the respective year and the rate of exchange of the leva, in accordance with the ratios between the commercial rate of exchange of the leva and foreign currencies, as established on 1 January 1962. The computed indicators and structures of the physical volume through 1960 are based on 1955 prices. For the years after 1960 they have been computed on the basis of 1 January 1962 prices and are chain linked with the computed indicators based on 1955 prices; starting with 1975 they have been computed on the basis of 1 January 1971 prices and are chain linked with the computed indicators based on 1 January 1962 prices.

Data on social consumption funds include wages paid out during regular and additional annual leaves.

Data on emergency medical aid stations apply to the separate stations and the stations attached to the corresponding health institutions.

The relative figures are computed on the basis of the average annual size of the population, with the exception of medical services, students, and percentage of people living in settlements supplied with running water and electric power, computed on the basis of the size of the population at the end of the year.

The computation on children attending nurseries per 10,000 children and children in kindergartens per 1,000 children is based, correspondingly, on the number of children under the age of three and children three to six years old at the end of the year.

5003

CSO: 2200

STUDY OF PUNITIVE MEASURES FOR LOW-QUALITY PRODUCTION PUBLISHED

Prague HOSPODARSKE NOVINY in Czech 16 May 80 p 4

[Article by Eng Frantisek Krejca and Eng Pavel Rott of the Czechoslovak State Bank; Conciliatory Attitude of Enterprises--a Double-Edged Sword: Results of the Investigation of the Effectiveness of the Instructions for Penalties for Low-Quality Production"]

[Text] The supply of quality, technically superior products on the world market is growing rapidly. If Czechoslovak products are to remain competitive with products from the other economically developed countries, then it is necessary that we apply the strict international standards in our economy.

From the point of view of monetary incentives, it is possible to effect the quality of products partly by "rewarding high quality" partly by "Punishing low quality." Current developments show that the first method has predominated over the second. This is evidenced, among others, by the comparison of the volume of technically advanced products given preferential price treatment, i.e., products classified by state inspectors as being of the first-quality and the volume of technically out-dated products classified as third-quality against which a price penalty has been assessed. The ratio is 9:1.

The standing of punishment of low-quality work" in an economic incentive system in the Instructions for Penalties for Low-Quality Production, which the State Planning Commission issued in cooperation with the Federal Ministry of Finance, the Federal Ministry of Labor and Social Affairs, the Federal Ministry of Technological and Investment Development, and the Federal Statistical Office, has been reinforced.

The Instructions define the concept of losses caused by low-quality production. These losses include:

--price reductions authorized and refunds (fines and penalties) made to buyers on the basis of accountability for defects in shipments of low-quality products;

--losses from rejects received from other sources and, since 1 January 1980, also losses from rejects produced internally;

--warranty repair costs after subtracting the [contractually] established costs for providing planned services to buyers, provided, they are not part of losses from rejects received from outside sources;

--fines assessed by the Standardization and Measurements Office.

The part of losses caused by low-quality production includes losses for the evaluation period written off by the organization accounting office for that period regardless whether the products were delivered or job accomplished before or during the given period.

For the purpose of enterprise incentives the losses from low-quality production are subtracted as a penalty from the actual value of production indicators (using indicators excluding the labor content; half of these amounts are subtracted industrial performance indicators (profit or loss). For the purposes of individual wage incentives (premiums, bonuses, and shares from industrial performances), as for the enterprise incentive system, the amounts of the losses from low-quality production reduce the indicators established for organization employees as an adjustable component of wages.

What Was the Bank Interested In

During the course of 1979 the Czechoslovak State Bank, within the framework of making inspections for adherence to the rules of the directive governing the wage fund, examined the impacts of losses from low-quality products on the enterprise incentive system. Further, an unscheduled investigation of the extent of reductions in organization's wages payable, which, according to directives, showed amounts due to losses caused by low-quality production, and which reduced the indexes regulating the wage development (performance and profit) by these amounts, was carried out at the end of the first year since the implementation of the directive to penalize low-quality production.

The branches and specialized departments of the Czechoslovak State Bank carried out the inspection according to the standing of the industrial and construction enterprises and industrial production units undergoing the comprehensive experiments for management of the departments of the FMHTS [Federal Ministry of Metallurgy and Heavy Engineering] FMVS [Federal Ministry of General Engineering], Ministries of Industry of the CSR and the SSR, and the Ministries of Construction of the CSR and the SSR as of 31 December 1980.

Subject to inspection were the amount of losses caused by bad-quality production and its effect on production results (i.e., the indicator of the amount of losses in hellers per Kcs 1.00 of output); amount of reductions in wages payable due to penalties for bad-quality production and its effect on planning for wages payable (i.e., the indicator of hellers of

reduction per Kcs 1.00 of planned wages payable); and the effectiveness of the implementation of measures passed to penalize bad-quality production.

The losses from low-quality production among the organizations inspected amounted to 1037.7 million Kcs, i.e., 0.2 percent of the production, not considering the effects of foreign trade (losses from low-quality production among the organizations surveyed represent roughly 80 percent of the total value of identified losses caused by low-quality production in the national economy). As a result, these organizations reduced the wages payable by 135.7 million Kcs, i.e., by 0.18 percent of the planned amount of wages payable of the organizations with proven low-quality production.

Results in the Mechanical Engineering Industry Were the Worst

In the examined group of organizations the machine-producing enterprises dominated in the size of losses from low-quality production and in reductions in wages payable. Their share was 80.5 and 73.7 percent of the indicator values respectively (with the Federal Ministry of General Engineering overall losses of 69.2 percent and 64.9 percent and the Federal Ministry of Metallurgy and Heavy Engineering 11.3 and 8.8 percent respectively). Within the framework of the machine engineering outputs, the most significant portion fell to the enterprises producing final goods intended for the individual consumption of the citizens [televisions, washing machines, personal automobiles, refrigerators] and to enterprises making products for the development programs [for example, automotive, tubular].

Differences existed in the size of reduction of the individual components of wages payable. While in enterprises not undergoing the comprehensive experiment in management, the wage reductions were greater than in the basic allocation from profit to the award funds, the industrial production units under the comprehensive experiment in management had on the contrary, a greater reductions in the incentive component than in the basic component of the wages payable.

The Czechoslovak State Bank carried out an unscheduled investigation analysis comparing enterprises of nonexperimenting industrial production units [VHJ] with experimenting ones.

The inspected industrial and construction enterprises of the VHJ not undergoing the comprehensive experiment in management showed, as of 31 December 1979, losses from low-quality production in the amount of Kcs 935.6 million, i.e., 0.23 percent of the output, not considering the effects of foreign trade. As a result of this, the wages payable were reduced by Kcs 114.9 million (i.e., by 0.20 percent of their planned volume).

The relatively most significant impact of penalties for low-quality production on the formation of special compensation funds was found in the VHI [industrial production unit] Strojsmalt, Bratislava (losses from low-quality production amounted to 3.70 percent of output and, due to these losses, the wage payable were reduced by 1.85 percent) and, [these losses were especially high] in the national enterprise Tatramat, Poprad (12.13 percent and 9.4 percent), national enterprise Calex, Zlate Moravce (6.48 percent and 3.49 percent); and of VHI Tesla, Prague (1.78 percent and 1.05 percent), especially in the national enterprise Tesla, Orava (10.99 percent and 9.97 percent); in the VHI Czechoslovakia Automobile Works, Prague (0.65 percent and 0.74 percent), it was especially the national enterprise AZNP [Automobile Works, National Enterprise], Mlada Boleslav (2.53 percent and 3.75 percent respectively).

The inspected industrial production units undergoing the comprehensive experiment in management showed, as of 31 December 1979, losses due to low-quality production in the amount of 102.1 million Kcs, i.e., 0.08 percent of output not considering the effects of foreign trade. As a result, the wages payable were reduced by 20.8 million Kcs (i.e., by 0.13 percent of the planned size of the wages payable).

The relatively most pronounced impact of penalties for low-quality production was found in industrial production units Ogako, Partizanske (losses from low-quality production amounted to 0.14 percent of output, and due to these losses, the wages payable were reduced by 0.31 percent), General Engineering Plants, Brno (0.25 percent and 0.26 percent), and Czech Rubber and Plastic Works Gottwald (0.16 percent and 0.20 percent respectively).

The Most Significant Shortcomings in the Enterprises

From the unscheduled inspections concerning the effects of low-quality production on the size of the wages payable in the examined group of organizations the bank obtained, the following information stands out.

During the check of compliance with the social wage regulation in the course of the year, the branch banks found that the enterprises did not always proceed, in showing losses from low-quality production, according to instructions. The following shortcomings were found in the enterprises.

--for purposes of regulating wages, the amounts, expressing the losses from low-quality production were not subtracted from the actual production and profit indicators, or the subtracted amounts were less than the actual losses of the enterprises. This caused the reduction in the wages payable to be less [than actual].

--Financial statements did not provide for controls of amounts of losses due to low-quality production for lack of special analytical accounts.

Shortcomings also occurred in the work of the supervisory agencies. The majority of them did not develop the instructions for the area of individual

monetary incentives so that losses from low-quality products were not reflected in special compensation of personnel responsible for these losses (premiums, bonuses and share in production results).

From the point of view of the structure of losses from low-quality products, the largest losses were due to price reductions to buyers as a compensation for defects in the low-quality products, fines and expenses for maintenance under warranty (this applies primarily to the general engineering industry plants).

As the cause of the rise of low-quality production, enterprises blamed especially the high rate of fixed assets write-offs, use of substitute materials which did not have the requisite quality and durability, damages to products during transportation, improper storage, not following the technological procedures and technical defects in the machinery, too demanding production, and a shortage of skilled workers.

Another important finding of the unscheduled inspection was that enterprises with relatively similar management conditions showed different levels of losses from low-quality products.

Conditions for Actual Effect

The 1-year results of the implementation of the instructions for penalizing low-quality production in industrial plants and construction enterprises controlled by federal and republic central organizations have shown that the contribution of the directives up to now was, above all, in the formulation of rules for quantifying the losses from low-quality production and in this connection a procedure for evaluating the effectiveness of the organization has been established. In applying the measures contained in the instructions, some of the shortcomings described in this article occurred in 1979.

Measures against low-quality production were not and will not be sufficiently effective until the buyers will uncompromisingly apply their legal right against suppliers with respect to low-quality products and low-quality service. The levels of losses from low-quality production and thus the penalties were, moreover, negligible in the evaluation of the period in enterprises producing for production needs. They occurred, however, in enterprises producing final goods for public consumption. This is also reflected in the reality that the public has used its rights of recovery against suppliers of low-quality goods and services with relatively less willingness to compromise than enterprises purchasing for production needs.

The supervisory organizations must pay its debts in the area of developing the directives for the area of individual wage incentives (premiums, bonuses and shares of production) and, furthermore, must consistently enforce the imposition of penalties on workers responsible for the losses due to low-quality production.

A responsible stand of the leading managers on the problem of low-quality production is extremely important. On their approach to the reduction and, especially, toward the prevention of low-quality production or activity depends on how great a part of the labor content will be expended needlessly. If the penalties for low-quality products against special compensation funds were not applied, then money, not covered by adequate goods capacity, would get into circulation.

We also cannot forget the reality that in the export of low-quality goods and services, Czechoslovak enterprises lose their posture on foreign markets which reflects in a finished product inventory accumulation by domestic producers and thus in cancellation of a part of the national income or in causing Czechoslovak products to be sold in foreign markets at heavy discounts.

Low-Quality Cannot Be Justified

First of all, there are enterprises with a high share of losses from low-quality production and a high share of reductions in wages payable, which have presented and continue to present demands to the supervisory organizations for a relief from these penalties. So-called objective reasons presented in the requests by enterprises (for example, the establishing of limits on low-quality production for repairs under warranty and inclusion of only the portion over this limit in the losses) cannot be accepted, because this process would negate the measures whose goal is the reduction of losses caused by low-quality production.

Generally stated each enterprise enters the production process partly as a consumer and partly as a supplier. If enterprise losses from low-quality production were tolerated in their role as a supplier, even though "objectively" justified (for example, due to supplies of low-quality raw materials, components, etc) then the enterprise itself would not exert appropriate pressure on its suppliers, i.e., it would not consistently apply the buyer's legal right of recovery against its suppliers of a low-quality product or service. Further, it is assumed, that each domestic enterprise and foreign consumer demand only high quality goods and services and are not interested in any "objective" reasons for low-quality products and services.

Therefore, also in the future, the Czechoslovak State Bank will contribute with its inspection activities, to a gradual decline in the number and extent of shortcomings in the application of the directives in the sector of wage regulation and to a consistent enforcement of measures aimed against low-quality production, thus contributing to higher effectiveness and quality of the expended work.

9327
CSO: 2400

GERMAN DEMOCRATIC REPUBLIC

TRANSPORTATION SYSTEM TASKS FOR 1980 OUTLINED

East Berlin DDR-VERKEHR in German Vol 13 No 4, Apr 80 signed to press
25 Feb 80 pp 112-115

[Report on a seminar with the leading cadre of the transportation system in Gotha to evaluate the 11th SED Central Committee Session: "The Tasks of the Transportation System in 1980"]

[Text] On 21 and 22 February 1980 a seminar was held in Gotha with the leading cadres of the transportation system on the subject of "The Tasks of the Transportation System in 1980 for the Further Systematic Realization of the Resolutions of the Ninth SED Party Congress on the Basis of the Fundamental Direction as Put Forth by the 11th SED Central Committee Session." By way of introduction, GDR Transport Minister Otto Arndt presented a policy statement dealing with the following substantive issues:

--current problems of foreign policy and economic strategy in the 1980 plan year;

--assessment of the work of the transportation system in 1979;

--the tasks of the transportation system to fulfill the 1980 economic plan with consideration of the required development of capacity, the division of labor and optimization of transport, the use of the assets and service of science, technology and investments, the tasks having to do with foreign currency management, the use of work forces and obtaining vocational trainees;

--demands for improving management and planning with conscious emphasis on performance evaluation and economic accounting, with respect to management organization, the direction of socialist competition and cadre work.

With the following editorial summary we want to call the attention of our readers to important aspects of and relationships in our economic policy strategy and the resultant consequences for the 1980 transport policy.

At the start of his speech, Minister Arndt stressed the fact that the direction provided by the resolutions of the 11th SED Central Committee session and the speech by Erich Honecker, general secretary of the SED Central Committee, before the Kreis First Secretaries, establishes for the transportation system, too, uniform standards for the scope and quality of the tasks to be fulfilled. Only in that way will it be possible to make successful contributions to the further realization of the resolutions of the Ninth SED Party Congress and to the preparation for the 10th party congress of the party of the working class. Then, after Minister Arndt had commented on basic questions of the international situation, he made specific reference to the inseparable relationship between policy and the economy and to the necessity for further continued successful realization of our program of full employment, prosperity, growth and stability in the face of altered foreign-trade conditions, to be accomplished in accordance with the terms of the resolutions of the 11th SED Central Committee session.

Outstanding Performances in 1979

The minister then acknowledged the tremendous performances of the working people in the transportation system in 1979 and explained that as a result of the peak performances in the transshipment and transport of goods which were achieved in November and December the transportation system in essence transported all goods that were ready for shipment and was able to fulfill the agreements made in respect to catching up on shipping backlogs.

Transport Minister Arndt stated it this way: "I would like to use this opportunity to express my thanks and appreciation to all the working people in the transportation system for the work accomplished in 1979 and for the results thus achieved." In his subsequent remarks Minister Arndt then went into detail about the development of capacity and fulfilling the plan indexes by the carriers. The basically total meeting of transport needs did not necessarily also result in fulfilling the transport plan. From this the speaker drew the conclusion that the needs as planned for the transport of goods, primarily for the transport of trucked goods, was not realistic at this level. In respect to passenger traffic, the minister made the critical comment that quality, punctuality and reliability still leave something to be desired and thus there is a need to achieve lasting improvements.

In the transportation system as a whole, industrial goods production reached the 100.3 percent level, planned vehicle maintenance exceeded the plan by M15 million and even the production of rationalization means experienced a 30-percent increase over the previous year, the equivalent of exceeding the plan by 13 percent.

The strengthening of the material-technical base of the transportation system can be substantiated by the fact that the following selected transport means and facilities were put into operation:

Railroad:	95 tractor units
	8,500 freight cars
	300 railway excursion cars
	135 km of second track
	94 km of electrified routes
	300 railbrakes
Ocean shipping:	16 ocean and coastal ships
Vehicle and municipal local traffic:	1,700 trucks
	1,300 postal buses
	225 streetcar tractor units and trailers
	120 subway railway cars

Our Economic Strategy Given the Conditions of Foreign Trade

Further on in his speech, the minister then referred to the changed foreign-trade conditions. The speaker started with the fact that the prices of raw materials will continue to rise. The price of petroleum was characterized as a decisive factor; a substantial price increase must be expected by the end of 1980. On the other hand, for finished goods the potential price increases in the capitalist market will presumably be substantially lower than those for raw materials. The overall development of capacity in our country's economy must therefore be borne to a far greater extent by scientific-technical progress; in this connection, strengthening the energy and raw material base is the basic issue in our economic strategy. In Minister Arndt's words, this also has far-reaching consequences for the transportation system, and the point is that the transportation system in this plan year must be equal to its role as a factor of productivity in the economy under substantially more complicated conditions. The following basic questions are therefore the focal point in the political-ideological and economic work:

1. Society's needs for transport and transportation must be satisfied in a timely manner and with lower use of capital. In this connection, special importance attaches to the optimization of economically recognized transport needs and efficient division of labor between carriers in the economic sense.
2. Science and technology must become the primary factors for growth in capacity and efficiency in the transportation system.
3. Investment funds must be used for strengthening the material-technical base in such a way that rapid growth in capacity and a high level of efficiency in individual projects is guaranteed.

4. Lowering production consumption is an indispensable prerequisite for the necessary growth in efficiency. As a large-scale economic consumer of liquid fuels and propellants, rolled steel and sawn timber, it is up to the transportation system to find solutions which will result in savings in completely new dimensions.

Therefore, the plan for 1980 depends on two fundamental goals: first, reducing economic transport needs in terms of quantity and capacity, and second, lowering the first costs per unit of transport capacity.

Reduction of Transport Needs Is Focal Point of Work

In this connection, Minister Arndt estimated that for 1980, too, the specific needs for the transport of goods are still too high and that at present the most important task is to reduce these requirements to a level that is socially justified and, as a result of this, to achieve plan-effective agreement between economic transport needs, possible development of capacity and energy management requirements. In particular we have the following tasks:

1. Further optimization of transport and establishment of calculable measures that are effective in terms of results and the plan in selected economic branches, primarily in the sectors of coal, energy, construction, the chemical industry and agriculture in order to effect at least a 3-percent reduction in the specific needs for transport capacities.

2. Optimization of the use of transport capacities with the goal of realizing, in terms of the plan, the transport requirements, primarily through a division of labor, which is more purposeful in terms of energy management and which is linked with efficient technologies and continuous utilization of transport capacity.

3. Further improvement in the planning of the economic transport needs both in respect to the planning for the year and to monthly short-term operational planning.

4. In the formation of new combines and the further development of existing ones, delivery conditions, which are considerably more optimal in respect to transport, must be guaranteed from the point of view of cooperative relations, location of production sites, and territorial concentration.

5. In order to guarantee trouble-free production and steady supplying of the people and better provisioning, the warehouse network designs of the various industries must be gradually further realized, with consideration of optimal transport conditions. In this connection, it is a matter of further developing the storage capacities, including warehouses in the seaports, in conformity with economic needs, and of better adaptation of the normative provisions of inventory to the needs.

New Technologies Help Save Money and Fuel

Minister Arndt then acknowledged the numerous economic activities in the transportation system within the meaning of the resolutions of the 11th SED Central Committee session and then dealt specially with an example from Frankfurt/Oder Bezirk. In order to take into account the demand for a sensible division of labor and a more efficient use of workers, energy and material, a technology was developed by a collective of vehicle traffic, comprised of shipping via inland waterways and construction, to transport panels for complex housing construction; this technology deals with combined transport by vehicle traffic and shipping via inland waterways. Followup use of this technology, which has been successfully used for some time, is now in progress in Potsdam and Neubrandenburg bezirks. The effects achieved to date are reflected in the saving of transport costs which amounted to M4.4 million and 70,000 liters of diesel fuel.

This year 160,000 large panels for complex housing construction are to be transported with the above-mentioned technology. Thus, in contrast to traditional heavy transport exclusively on roads, 64 drivers, 14 truck tractors and their P 402 low-bed trailers and 30,000 liters of diesel fuel will not be needed, amounting to a saving of M2.2 million in transport costs.

Passenger Traffic Is an Important Element of Our Social Policy

In reference to passenger traffic, Minister Arndt said that it will increase by 53.5 million people. That would be 1.3 percent more than in 1979. Raising quality, especially reliability and punctuality, must be the focal point of this effort. The minister characterized passenger traffic as an essential component of the social policy of our party leadership and government and said: "The citizen has a right to be able to make full use of transportation opportunities which are offered in the schedules of the individual carriers. In this respect, breakdowns in municipal transportation, which still occur too frequently, and the degree of punctuality are not all together satisfactory and also not objectively justifiable."

Since any slackening in efforts to improve passenger traffic can be neither economically justified nor politically defended, all involved must make a serious effort to translate into action the measures and directives in this area which are still in effect.

Concentration of Science and Technology on Decisive Rationalization Complexes

Further along in his speech, Minister Arndt took up questions of science and technology and the key issues of socialist rationalization and stressed the necessity for increasingly greater concentration of scientific-technical work on longer-term rationalization complexes and the lowering of production consumption. Technological work was characterized by Transport Minister Arndt as the essential element in research activity and the innovators movement.

In line with the requirements for further intensification of the production of rationalization means for the transportation system the present long-term development ideas for those rationalization complexes which have the most lasting impact on any greater performance and efficiency are being defined. This primarily concerns the following basic programs:

- increasing the rate of electrification of the GDR railroad;
- accelerated equipping of selected routes and stations with modern safety and telecommunications equipment;
- continuation of multitrack expansion of GDR railroad routes;
- mechanizing GDR railroad switchyard stations;
- rationalization of long-distance traffic of trucked goods by optimization of transport for furniture, chilled cargo, construction materials and clothing, as well as rationalization of the international transport of goods;
- rationalization of truck maintenance processes;
- rationalization of seaport transshipping and handling processes;
- development of ideas for accelerated development and use of microcomputer equipment.

In addition, the speaker made it known that appropriate designs are being prepared to develop regeneration capacities for exchange and replacement parts for the production of secondary raw materials.

The minister then acknowledged the innovator movement to be an important element in accelerating scientific-technical progress. In his words, there should be greater emphasis than heretofore on problems of the most economical use of energy; in this connection, the concern in the case of the GDR railroad is primarily with those tasks whose solution will make possible more rapid and more comprehensive implementation of electric (E) traction. In order to make all these ideas generally known, in order to make even better use of experiences to date, there will be a rationalization conference this year for the transportation system.

Transporting More At Less Cost

On this topic, the minister said: "As everywhere in our economy, the transportation system also faces the task of fundamentally improving the relationship of cost and energy. In the transportation system, the share in the gross product of production consumption is almost 70 percent. Of this, 12 percent is amortization and 58 percent energy and material consumption. Our special responsibility is determined by the fact that at

present 15 percent of the total usable energy of the GDR and two-thirds of the diesel fuel, respectively, are being used for implementing transport.

Referring to the progress in the efficient use of energy since the Eighth SED Party Congress, the speaker underscored the fact that with a 29-percent increase in passenger transportation capacity and a more than 36-percent increase in the capacity for the transport of goods, excluding ocean transport, it was possible to lower the absolute consumption of energy by about 8 percent. The energy situation requires realization of new magnitudes of savings, primarily with liquid propellants and fuels; it also requires the preparation and implementation of the measures necessary to do this. The minister called attention to the fact that in this matter we are concerned both with longer-term conceptual measures, such as, for example, speeding up the rate of electrification of the railroad and also with measures which take effect in a short time.

Minister Arndt thus mentioned as the central objectives:

--to limit rail transfer transport this year to 2 million tons as against the past year's 5 million tons;

--on principle, to stop long-distance transport by public vehicle traffic exceeding 300 km of transport distance; so far these have amounted to about 1.5 million tons;

--to reduce by 5.5 million tons the long-distance transport of factory traffic.

The speaker referred to the fact that it will be possible through these measures to save substantial quantities of diesel fuel. But it is also necessary to make better use of the existing fleet of railroad rolling stock and to acquire additional freight cars for the GDR railroad.

Among other things, there are thus the following consequences for the work of the bezirks:

1. Further review of transport needs, with the goal of achieving a further reduction especially in factory traffic, since at present its specific fuel consumption is on the average 17 percent higher than for public vehicle traffic;

2. Increasing the efficiency of the operational points of vehicle traffic with respect to coordinating the long-distance trips of factory traffic and to arranging return loads in reciprocal traffic;

3. Expansion of central coordination of the use of special furniture vehicles, introduction of central coordination for chilled cargo transport in 1980 with the help of electronic data processing and introduction of bezirk coordination of the transport of construction materials, drawing on the computer technology available in the bezirks;

4. Better use of existing transport capacity in the factory transport groups by stabilizing existing and creating new factory transport groups. This requires more effective managerial influence by the superior economic units as well as the implementation of territorial exchanges of experience;

5. Observance of centrally-directed technical-organizational measures such as:

--legally set speed limit;

--influencing enterprises with factory traffic to standardize fuel consumption;

--increasing order and safety with reference to disconnecting vehicles upon completion of service in accordance with enterprise regulations which are in force, and the organization of better technical maintenance and repair.

Basic Assets Economy and Investments

After Minister Arndt had explained a number of additional examples of the most economical production consumption, he stressed the necessity of lowering costs which cannot be planned and which accrue to the transportation system from stipulated penalties, interest charges beyond the plan, inventory discrepancies and indemnifications. Furthermore, it is a question of decisively lowering the costs for performance of exchanges, refinishing operations and guarantees as well as the costs for management and administration in the transportation system.

The importance of a good basic assets economy was substantiated by the minister with the following facts: the total investment capability of the centrally and locally administered transportation system amounts to over M100 billion, that is, more than 40 percent of the basic assets of all industry.

Thus, greater utilization of basic assets also means intensification of work processes and simultaneously represents the basis for better meeting of needs. Within this meaning, it is a matter of continuously checking the degree of utilization of basic assets and equalizing more and more the existing differences in level between the combines and enterprises. In principle it is a question of:

--increasing the productive amount of time in the use of transport means;

--improving utilization of transport means;

--constantly guaranteeing order and safety when working with transport means;

--raising the degree of availability and serviceability of transport means.

The speaker characterized the economic use of investments as a decisive link in arriving at new technologies and a rapid increase in capacity. To this end it is necessary to concentrate on the following key points:

- concentration of material and financial assets to guarantee economically based transport tasks, for intensification and rationalization, for lowering the needs for workers, energy and material consumption, and for accelerated practical application of the results of science and technology;
- lowering investment costs, reducing the number of investments which must be initiated and are incomplete, and general shortening of construction times;
- cooperation in realizing the housing construction program with minimization of costs for developing transportation;
- stronger central influence on investment activity in the territory, including differentiated targeting for the locally managed transportation system;
- improving work relating to basic assets and improving the investment plan for the period 1981-1985.

On the basis of this direction, more than 50 percent of the investment volume this year will be concentrated on railroad and ocean traffic and seaport management. Each investment is to be reviewed with regard to observance of the following standards:

- most economic use and concentration on those projects which quickly offer a high level of growth in productivity and capacity;
- guaranteeing full production efficiency of the results of scientific-technical work;
- saving labor force and starting operation of new capacities without the need for additional workers;
- utilization of new basic assets over at least two shifts;
- reduction of imports from nonsocialist economic areas;
- shortening construction times by one-third to one-half the time originally set.

Most Important Rationalization Project--Electrification of the Railroad

In this connection, the transport minister once again went into the subject of route electrification of the railroad and said: "Our investigation results clearly show that, given the altered energy-management situation,

the economically most favorable alternative to the efficient use of energy consists in the speedy electrification of the railroad, coupled with expansion of its routes and increasing its transport capacities. Electrification is, and for the next few years will be, the most important rationalization measure of the GDR railroad in order to meet the growing transport tasks with a simultaneous lower outlay of primary energy of about 20 percent and a reduction of about 10 percent in the cost of workers by 1985. On the basis of the high energy-producing efficiency of electric traction and the fact that construction capacities and locomotives built in the GDR can be used, the rate of electrification must be substantially accelerated. Our present considerations suggest accelerating the job of connecting our capital city with the electrified routes in the direction of Halle and Dresden and continuing electrification to the north in order to link the seaport of Rostock, as an important traffic junction with a rapidly growing volume of goods, with the electrified railroad network. Thus, two main lines of rail traffic from Rostock to Bad Schandau and from Rostock to Erfurt could be traversed all electrically and their handling capacity could be decisively increased."

Now it is a question of guaranteeing, through economically based conceptual preparation, the realization of this strategy in working on the 1981-1985 Five-Year Plan. The minister challenged the leading cadres to work toward this end so that electrification in all phases of preparation and implementation is treated as an overall economic task by all economic sectors involved.

The speaker then mentioned, as an additional point of concentration in investment activity, construction activity in Berlin, the capital of our country. In this it is a question of providing transportation for the planned-for residential sites; in this connection, the northern part of the city is the main target. Electrical and surface-operated mass transit means have priority.

Various Tasks Relating to Foreign-Currency Management

In respect to the foreign-currency management of the transportation system, the minister stated that it was a question of fully utilizing the capabilities of the market and a flexible price policy. It is primarily a matter of full, efficient and year-round utilization of our own transport capacities for international traffic. This naturally also requires guaranteeing that the capacities of vehicle traffic for goods, which capacities are earmarked for international traffic, are ready for service. The minister characterized the foreign-currency-operation costs which arise with the use of our own capacities in international traffic as being very important. The strictest economy needs to be exercised in refueling abroad and in car rentals. In this area, it is essential to intensify efforts to determine normative cost provisions and in the competition of the enterprise collectives to include the saving of foreign-currency outlays. It is equally necessary to implement a strict policy in work with foreign cars and to adhere unconditionally to the scheduled lengths of stops in our own system.

In concluding discussion of this set of problems, the speaker called attention to the close connection of the results of foreign-currency management, on the one hand, and the quality of cooperation between the transportation system and foreign trade, on the other hand. Constant definition of foreign-trade transport needs is an indispensable prerequisite for the optimal use of our own transport capacities and for minimizing the outlay of foreign currencies. Therefore, considerable attention must be paid to questions of planning and managing foreign-trade transport.

Performance-Related Wage Policy and the Development of Working and Living Conditions

In a further section of his speech, Minister Arndt referred to the necessity of developing, according to the plan, the social capacity for work. The fact that in the transportation system there are not enough workers, on the one hand, causes many sectors to resort to overtime hours; on the other hand, many of these overtime hours are wasted because of breakdowns of the most varied kinds. The speaker justly characterized this situation as an important reserve for solving the problem of workers. Thus, Minister Arndt mentioned the following measures as a central set of objectives for the current plan year:

- to save 20 percent more work hours than in 1979 through the results of science and technology;
- to reduce management and administrative personnel by at least 2 percent;
- to lower breakdown times by at least 8 percent.

Other statements by the minister had to do with the close relationship between a performance-related wage policy and the scientific organization of work. By the end of 1979 basic wages for 26,000 production workers and output-related salaries for 1,700 masters and 800 advanced and technical school cadres were introduced. In the sector of vehicle repair, this wage policy alone in 1979 resulted in a 5.2-percent increase in work productivity. In 1980, basic wages and salaries based on performance will be introduced for 26,300 additional transportation system workers. These measures are flanked by the further steady remodelling of existing places of work which still have a high concentration of pollutants, noise or physically heavy work, raising the extent of providing workers on shift service with a warm main meal and purposeful involvement in local housing construction. In this connection, the speaker appealed to the managers of the transportation system to effect a balance, to improve working and living conditions by fulfilling the central and enterprise programs. The complexes of working conditions, health and social care, supplying with work, living conditions of the workers, enterprise recreation system, housing and caring for children and commuter traffic must be precisely evaluated and the preparation of central and enterprise programs for 1981-1985 must be tackled.

Cadre work and finding cadre trainees comprised another series of problems in the minister's speech. Minister Arndt emphasized that there was success in the past few years in developing thousands of cadres that struggle with solving the tasks set by the party and government, firm in their principles and with a high level of readiness for service. In the minister's words, there are successes in cadre work when the cadre policy is a primary component of the management process, when over the years continuous analytic and conceptual work is done, when there is a stable and usable cadre reserve, when work with the cadre trainees is done well and according to plan, as is the case, for example, in the Erfurt, Cottbus, Dresden and Schwerin railroad directorates, with Interflug or in the Halle and Karl-Marx-Stadt vehicle traffic combines.

The significance of assignments to direct study and correspondence courses and the obtaining of persons leaving school for professional training in the transportation system was assessed by Minister Arndt as being a management task of the highest priority which must be perceived with a high political sense of responsibility.

In conclusion, Minister Arndt named the central goals of socialist competition which are reflected in the following guidelines:

1. In the transport sector, too, it is a question of additional daily production, whereby the additional transport needs must be realized without increasing the planned capital;
2. In the sectors of industrial production and construction production the additional daily production must be guaranteed without additional demand for material and financial capital;
3. In all other sectors, as for example Mitropa [Central European Dining- and Sleeping-car Corporation] and travel bureaus, which cannot effect additional daily production, the use of capital assets, such as material, use of foreign capacities, first costs, must additionally be lowered by the cost of one workday and the means thus released must be made available to the state budget.

In conclusion, the minister said that a decisive reserve consists in making the level of the best the standard for the work of all.

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LAST YEAR'S FOREIGN TRADE PRICES VIEWED

Budapest FIGYELO in Hungarian No 21, 21 May 80 p 7

[Article by Mrs Gyula Szonyi: "Foreign Trade Prices in 1979"]

[Text] Prices in international trade began to rise sharply already in the third quarter of 1978. In the wake of the events in Iran, petroleum prices were the first to rise. During 1979, however, the uncertainties on the raw-material markets and intensifying speculation caused significant increases also in the prices of other important raw materials. At the same time, harvest results were also poor in many instances.

In the socialist countries' ruble-denominated mutual trade the world market's 1979 price movements did not yet assert themselves, due to the pricing principle employed. Consequently, the foreign-exchange prices rose more moderately than in nonruble-denominated foreign trade.

In Hungary's ruble-denominated foreign trade the price level of imports at foreign-exchange prices was about 5 percent higher than the preceding year, and the price level of exports rose by about 3 percent. Since the ruble's exchange rate in relation to the forint dropped 3.7 percent in 1979, the price index at the commercial rate of exchange showed a rise of only about 1 percent over 1978 in the case of imports, and a rise of a few tenths of a percent in the case of exports. The terms of trade worsened by 2 percent, at the same rate as the year before.

Ruble-Denominated Foreign Trade. Price Indices and Terms of Trade in 1979
(1978 = 100)

	<u>Import</u>	<u>Export</u>	<u>Terms of Trade</u>
In forints	101.2	99.4	98.2
In rubles	105.1	103.2	-

In nonruble-denominated foreign trade, which was directly affected by world-market price movements, the price levels rose significantly. The import-price level in forints rose by about 11 percent, and the export-price level in forints was higher by about 9 percent than in 1978. After a modest

improvement in 1978, the terms of trade in nonruble-denominated foreign trade worsened slightly in 1979.

Nonruble-Denominated Foreign Trade. Forint-Price Indices and Terms of Trade in 1979 (1978 = 100)

Import	110.6
Export	109.3
Terms of Trade	98.8

Since nonruble-denominated foreign trade is transacted in several different foreign currencies, the computation of price indices in terms of a single foreign currency is less unambiguous. In full awareness of this fact and solely to serve as a guide, price indices based on nominal dollar prices have also been calculated that do not take into account the decline of the dollar-to-forint exchange rate during the given year. The dollar-price indices computed in this manner for 1979 show a rise of about 17 percent in the import-price level, and of approximately 15 percent in the export-price level.

For the two principal destinations and provenances, the average price levels expressed in forints--reflecting the combined net changes during the year in the foreign-exchange prices and in the exchange rates of the foreign currencies in relation to the forint--showed a rise of about 6 percent over 1978 in the case of imports, and of approximately 4 percent in the case of exports.

Ruble Prices

Within ruble-denominated import, the above-average rise of energy prices and the 3- to 4-percent rise in the other commodity sections essentially meant that the forint-price indices did not change significantly in comparison with 1978. At the same time, however, the import volume increased by 5 percent in 1979; the import volume of energy sources showed the sharpest rise, while the import volume of materials was less than in 1978.

Development of Ruble-Denominated Foreign Trade in 1979 (1978 = 100)

	Import in		Export in	
	<u>Forints</u>	<u>Rubles</u>	<u>Forints</u>	<u>Rubles</u>
Sources of energy, electricity	107.4	111.5	103.3	107.3
Materials, semifinished products, parts	100.0	103.8	98.2	102.0
Machinery, transportation equipment, other capital goods	99.5	103.3	99.5	103.3
Industrial consumer goods	99.6	103.4	99.0	102.8
Food-industry raw materials, livestock, food products	100.5	104.4	101.9	102.8
Jointly	101.2	105.1	99.4	103.1

Among the principal sources of energy, the price of petroleum (measured in forints) increased by 10 percent; the prices of natural gas and diesel fuel increased at more or less identical rates, 8 percent; while the rate of increase in the price of gasoline was somewhat lower, 6 percent. In the importation of materials the rise in ruble prices was offset completely by the decline of the exchange rate, and thus the price level in forints remained unchanged.

In ruble-denominated export the price index measured in forints rose slightly only in the case of less significant sources of energy and of food products, while for most exports there was a drop of 1 to 2 percent.

Machinery accounted for nearly one-half of the total export to this principal destination. At a 15-percent increase in volume, the foreign-exchange prices rose by only a few percent, and thus the price level in forints only approximated the preceding year's price level. Prices developed similarly in the case of industrial consumer goods, but here the export volume increased only slightly. The forint-price indices of some of the significant industrial consumer goods were as follows (1978 = 100):

Men's dress shoes	99.6
Ladies' dress shoes	100.5
Packaged pharmaceuticals	96.2
Incandescent lamps	99.1

Several significant export items contributed to the better-than-average development of the prices of food products. For example, we were able to export at prices that were higher by 7 percent for apples, 5 percent for canned vegetables, 7 percent for canned tomatoes, and 17 percent for fresh eggs.

Nonruble-Denominated Trade

Computed on the basis of the forint's commercial rates of exchange, the costs of nonruble-denominated import increased by 11 percent (as outlined above, this meant that the increase in foreign-exchange prices was higher by several percentage points). This higher cost of import resulted mostly from the higher prices of energy and raw materials most affected by developments on the world market. Incidentally, our imports of sources of energy last year dropped by 20 percent; and our imports of materials, by about 11 percent.

In conjunction with the slower rate of capital construction, the import volume of machinery and equipment likewise dropped, and the rise in the forint-price index was below the average. In the case of food products, the forint's upward revaluation offset the higher foreign-exchange prices in such a way that the forint-price level was almost 1 percent lower than in 1978.

Development of Nonruble-Denominated Foreign Trade in 1979 (1978 = 100)

	<u>Import</u>	<u>Export</u>
Sources of energy, electricity	146.3	134.6
Materials, semifinished products, parts	113.9	118.6
Machinery, transportation equipment, other capital goods	103.3	102.5
Industrial consumer goods	102.6	103.3
Food-industry raw materials, livestock, food products	99.2	104.3
Jointly	110.6	109.3

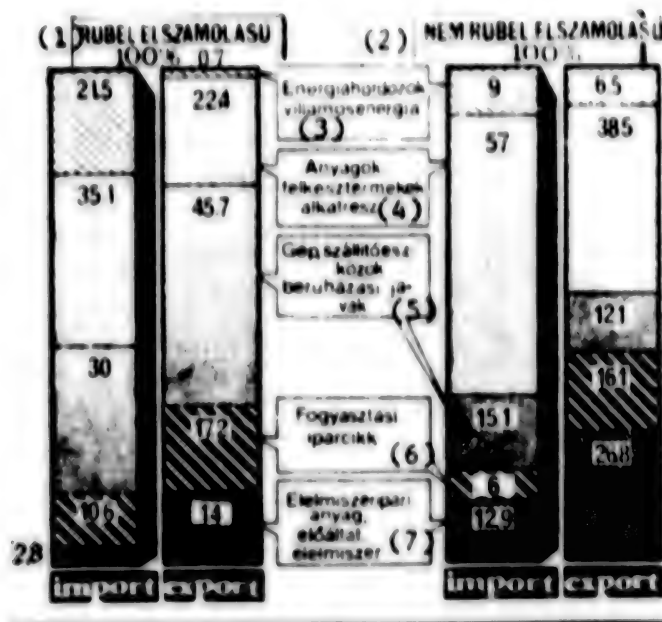
Within Hungary's import, the prices of both petroleum and fuel oil increased by 40 percent, while the price of gasoline rose by 88 percent and the price of diesel fuel, by 70 percent. Within imports of materials, which accounted for more than 50 percent of total import, the prices of basic materials rose faster than the prices of semifinished products. From nonruble-denominated provenances we had to pay significantly higher prices than in 1978, for lead (up 79 percent), copper products (up 39 percent), ferroalloys (up 36 percent), crude copper and semifinished copper (up 30 percent), and zinc (up 23 percent). The sharp rise in hide prices was felt also in Hungary's import: the price of cattle hides increased by 66 percent. The prices of soft lumber likewise rose significantly, by 42 percent.

The forint-price level of food products developed in such a way that we were able to buy a few products (coffee beans, fish meal, etc.) at prices lower than the year before, while we had to pay more for certain protein feeds and citrus fruits.

	<u>1979 Price Index (1978 = 100)</u>
Lemons	118
Meat meal	114
Soya flour	110
Oranges	107
Cacao beans	94
Bananas	93
Fish meal	89
Coffee beans	82

At a 9-percent average rise of the forint-price index, the rate of rise in nonruble-denominated export was outstanding: 16 percent. The world-market trends were reflected also in the development of export prices, i.e., the prices of materials rose sharply, and also the export volume was significantly higher than in 1978. Machinery, industrial consumer goods, and food products were exported at forint-price levels whose rise was more moderate. Particularly the volume of machinery exports was higher than the year before.

Product Structure of Foreign Trade in 1979



Key:

1. Ruble-denominated
2. Nonruble-denominated
3. Sources of energy, electricity
4. Materials, semifinished products, parts
5. Machinery, transportation equipment, other capital goods
6. Industrial consumer goods
7. Food-industry raw materials, livestock, food products

Within the 35-percent average increase in the prices of energy sources, the prices of fuel oil increased by 47 percent; of diesel fuel, by 46 percent; and of gasoline, by 59 percent. The fact that the export volumes were higher of several products whose prices also increased can be termed favorable. We may include here certain metallurgical products, for example, hot-rolled steel bars and sections (price index 119), rolled steel sheet and wide strip (index 121), hot-rolled steel pipes (index 122); furthermore, certain chemicals, for example, PVC powder (index 140), sulfuric acid (index 141) and benzene (index 218). Foreign trade marketed these products at higher prices and in larger volumes.

There was wide dispersion within the 4-percent rise in the forint-price level of farm and food products. The lively demand for wheat made its price-boosting effect felt also in our export: the export volume increased by about one-fifth, and the price was 15 percent higher. In the case of slaughter animals the changing world-market trends permitted only a moderate price increase of around 2.5 percent. (The price indices were 105 for

slaughter cattle, 103 for slaughter hogs, and 102 for slaughter sheep and rabbits.) Prices developed more favorably in the case of beef (107) and pork (106). The forint prices in export to nonruble-denominated destinations were lower than the year before in the case of apples (index 91), certain canned foods (index 97-98) and eggs (97).

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CAUSES OF SEASONAL FLUCTUATIONS IN FOREIGN TRADE DISCUSSED

Warsaw HANDEL ZAGRANICZNY in Polish No 1, 1980 pp 21-25

[Article by Jacek Glinski: "Seasonal Fluctuations in Turnovers in Poland's Foreign Trade -- Attempt to Identify Major Causes"]

[Text] Fluctuations in the sizes of export and import deliveries occur periodically in the turnovers of Polish foreign trade. These are short-term fluctuations visible in the monthly columns of exports and imports. Usually there is an upward fluctuation in the months closing individual quarters, while downward fluctuations are typical for months beginning quarters. A particular increase in the realization of export-import deliveries can be noted in December, but the greatest decline comes in January.

This phenomenon we have described has awakened the interest of authors of many articles^{2,3,4}, but there has not been any major economic analysis of it. Decided priority has been given to methodological problems related to an analysis of the stability of the fluctuations and to the construction of short-term forecasts. This article attempts to fill the gap in this area.

It is convenient to portray the sizes of seasonal fluctuations using the coefficients of shares and parameter D^0 . Tables 1 and 2 provide a numerical illustration of the scale of seasonal fluctuations (unevenness) in Polish foreign trade.

The question of periodic fluctuations in Poland's foreign trade deserves penetrating attention for at least two reasons. First, as we can see from calculations made for various time periods, the seasonal fluctuation of Poland's exports and imports is a lasting phenomenon, and, what is more, it is not a marginal one. In the past few years we can see some softening of the fluctuations, but this trend should be recognized as being very slow.

Second, the seasonal fluctuations of foreign trade turnovers is a phenomenon with resounding economic consequences which call for thorough investigation.

Table 1. Monthly Indices of the Share of the Annual Value of Polish Imports and Exports (in percent)

Exports		Month	Imports	
1961-1971	1972-1977		1961-1971	1972-1977
6,6	3,7	styczeń Jan	6,6	4,4
6,0	7,5	luty Feb	7,0	7,3
10,5	10,7	marzec Mar	9,8	10,0
6,3	6,9	kwiecień Apr	6,9	7,7
7,9	8,3	maj May	8,5	8,6
11,5	10,1	czerwiec June	10,1	9,2
8,8	6,2	lipiec July	6,6	7,2
7,1	7,5	sierpień Aug	7,8	7,9
10,7	9,6	wrzesień Sept	9,1	9,0
6,7	7,2	październik Oct	7,5	7,4
8,7	8,3	listopad Nov	8,5	8,2
14,4	12,1	grudzień Dec	13,7	13,5
10,3	18,4	parametr D	10,3	16,2

Source: Author's calculations based on seasonal fluctuation indices

Table 2. Polish Import and Export Dynamics Within the Quarter 1972-1977 (in percent)

Exports			Quarter	Imports		
Month in quarter				Month in quarter		
1	2	3		1	2	3
100	131,6	187,7	I	100	165,9	227,3
100	120,3	146,4	II	100	111,7	119,5
100	121,0	154,8	III	100	109,7	125,0
100	115,3	168,1	IV	100	110,8	182,4

The author of this article has made a preliminary assessment in this area: Here is the major conclusion: The short-term fluctuations in foreign commodity turnovers have an adverse impact on the effectiveness of operations in the broad sense. The following consequences can be considered adverse effects of seasonal fluctuations in Poland's foreign trade:

Reduced economic effectiveness of trade exchange with foreign countries,

Greater pressure in shipping and transport tasks during the final months of quarters,

Need to maintain operational foreign-exchange reserves in larger amounts.

The decline in the economic effects of foreign exchange appears on two planes: the plane of prices obtained for exports and paid for imports, and the plane of the quality of service from foreign contract partners. The seasonal fluctuations of foreign commodity turnovers run contrary to the postulate of making the policy of purchases and sales as flexible as possible. The large share of seasonal (uneven) deliveries means that non-price factors predominate in shaping the time structure of trade turnovers and are more important than possibilities of maneuvers oriented at obtaining better prices. A certain softening of price effects also stems from the desire to carry out the plan at all cost and from accelerating imports, which factor has a great deal to do with the mechanism of the seasonal fluctuations of trade turnovers.

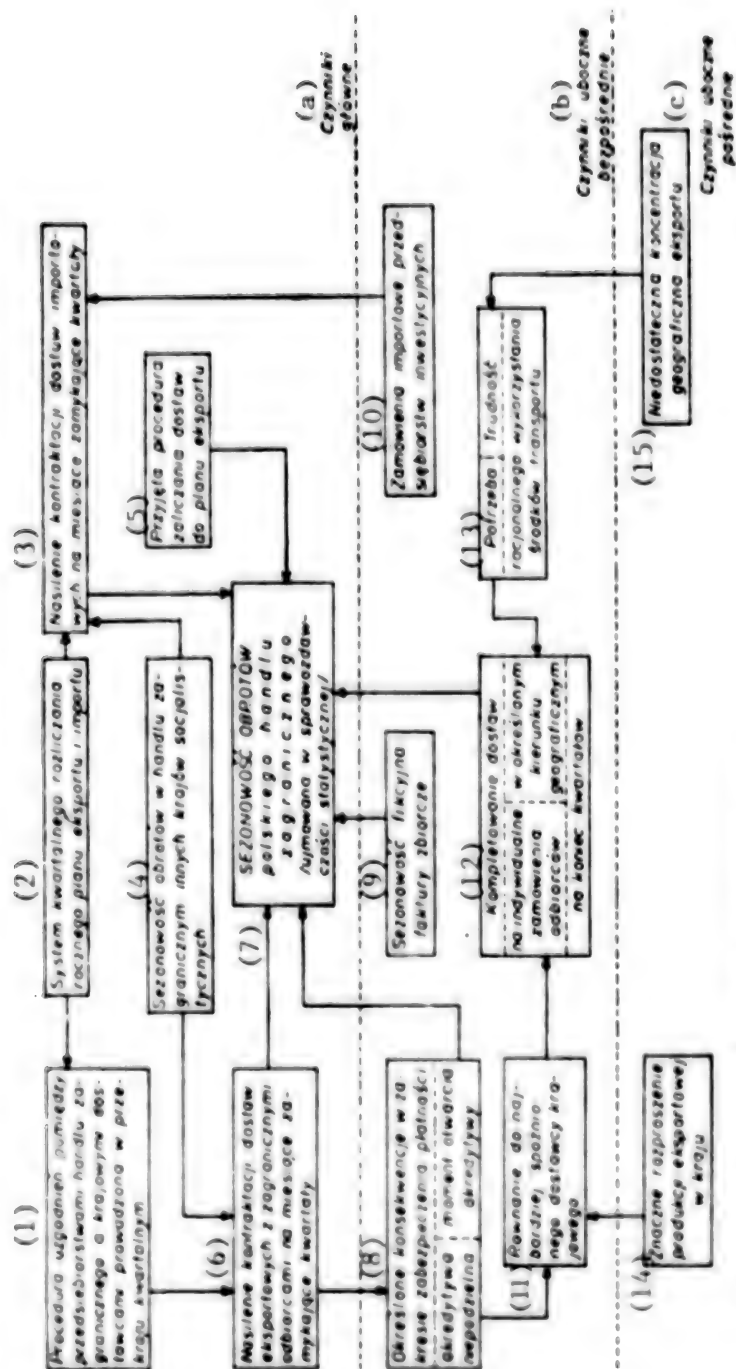
The diagram will serve as a point of departure to present the mechanism of seasonal fluctuations in Polish foreign trade. The diagram shows within the mutual relationships the major factors which shape the seasonal fluctuations in Poland's foreign trade. In keeping with Oskar Lange's suggestion that two categories of causes have an impact on mass processes, these factors have been divided into major factors and side factors. The major factors are those whose influence on seasonal fluctuations occurs in all economic units which carry on foreign exchange. The factors whose impact is limited to individual instances were categorized as side factors. Despite the narrow scope of influence, the scale of the impact which side factors have on the seasonal course of the overall sizes may be great, and it is for this reason that we should not take these factors lightly.

Identifying the Major Factors

System of Planning and Control of the Fulfillment of the Plan in Polish Foreign Trade

Seasonal fluctuations in Poland's foreign trade are fluctuations in carrying out the operative plans of the foreign trade enterprises. Like Pawel Sulmicki, I take the operative plan to be a "one-period plan which sets the limitations (tasks) assigned to concrete subordinates." At the level of the foreign trade enterprise, the operative plan is the quarterly plan. The quarterly plans of the foreign trade enterprises are based on the annual plan and agreements between the foreign trade enterprises and the domestic suppliers and customers. The annual foreign trade plan may be assigned to the fulfilling units after the Council of Ministers has approved the national socioeconomic plan, which usually occurs during the final months prior to the period of the plan. When we take into account the time which has to pass for the thorough analysis of the planned tasks "at the bottom," we can see the situation in which the foreign trade enterprises have difficulties in undertaking sufficiently ahead of time any more involved contracting activity. This partly explains why the implementation of imports and exports during the first 2 months of the year falls short of the monthly values which have been set.

Functioning of Polish Foreign Trade --- Diagram



Source : Author's own elaboration

[Key to diagram: Functioning of Polish Foreign Trade]

1. Procedure of agreements between foreign trade enterprises and domestic producers, conducted by quarters
2. System of quarterly settlement of annual export and import plan
3. Increase in contracting for import deliveries for months ending quarters
4. Seasonal fluctuation of turnovers in the foreign trade of other socialist countries
5. Accepted procedure for counting deliveries in the export plan
6. Increase in contracting for export deliveries with foreign customers in months ending quarters
7. Seasonal fluctuation of turnovers of Polish foreign trade (contained in statistical reports)
8. Specific consequences to insure payment: undivided letter of credit/ moment of opening of letter of credit
9. Fictional seasonal fluctuation: joint invoices
10. Import orders of investment enterprises
11. Equating to most "tardy" domestic supplier
12. Making deliveries complete: for individual customer orders/ in a given geographic direction/ at the end of the quarters
13. Need/Difficulty: of making rational use of transportation
14. Considerable dispersal of export production throughout the country
15. Inadequate geographic concentration of exports
 - a. Major factors
 - b. Direct side factors
 - c. Indirect side factors

Disturbances of a similar type which occur in the course of implementing commodity exchanges stem from the fact that the annual agreements with the socialist countries are usually signed during the first quarter of a given year. This means that the final agreement on mutual deliveries between countries included in payments area I are somewhat delayed in relation to the resolution on the national socioeconomic plan. This is reflected in greater unevenness in turnovers within the first quarter.

The next cause of seasonal fluctuations in turnovers in Polish foreign trade is related to the system of quarterly control of the annual exports and imports plan. Quarterly monitoring of the fulfillment of the annual plan is related to the system of providing incentives for foreign trade employees.

The system of bonuses and awards related to fulfillment of quarterly plans undoubtedly has a motivating influence on certain employees and contributes to the fulfillment of these plans, but I would not overestimate the role of this factor in explaining the issue of seasonal fluctuations. I think that the relationship between the quarterly settlement of the fulfillment of the plan in foreign trade and the procedure of agreements with domestic suppliers and customers play a more important role. This relationship will be followed separately for imports and exports. The annual export plan of the foreign trade enterprise divided into quarterly plans creates a system of operative plans at the enterprise level. Export tasks are divided up between the sector offices or trade units, and represent the direct goal of their activity. The implementation of the tasks set in export requires that two conditions be met: on the supply side, the goods to be exported absolutely must be placed at the disposal of the foreign trade centers on time; on the sales side, it is necessary to insure the sales of these goods on foreign markets. The steady fulfillment of the first of the above-mentioned conditions, although it is institutionally assisted by high-level units, runs into certain difficulties. First of all, the organizational units of industry operate under conditions of great tension with regard to production tasks. In this connection industry is not anxious to take it upon itself to confirm export orders over periods shorter than a quarter. In certain types of production this also follows from the length of production cycles. Export production usually calls for more careful processing and finishing, which extends the production cycle by the addition of these operations. This is understandable that industrial units which produce for export are interested in having a certain margin and therefore less tight tasks, in case unexpected circumstances arise.

Another factor which hampers the timely execution of export deliveries is the low extent of concentration of export production in most units of industry which produce for export. Bronislaw Wojciechowski provides the numerical data to illustrate this hypothesis.⁸ In 1971 54 percent of 802 enterprises examined in five basic sectors (electric machine industry, metallurgical industry, chemical industry, food industry, and light indus-

try) exported less than 10 percent of their production. B. Wojciechowski notes: "the difficulty of central management of their activity is an undesirable circumstance with respect to this category of exporters. Owing to the small share of their operations which is devoted to exports, they are not very sensitive to the impact of incentives or economic mechanisms directed to the development and improvement of export effectiveness. It is very difficult to accomplish this merely by issuing orders, owing to the great extent to which the activity is dispersed."

The influence of the above-mentioned factors manifests itself in the fact of the general tendency for industry to confirm the implementation of export orders in quarterly periods. Because the foreign trade enterprises carry out quarterly plans, this is not in great contradiction to their interest. The direct consequence of the fact that domestic producers confirm export deliveries in quarterly periods is that there is an increase in contracting for foreign deliveries in the final months of the quarters. By contracting for foreign deliveries at the end of the quarters, the foreign trade enterprises minimize the risk of incurring losses through the failure to meet the deadlines set for delivery.

The establishment of the influence which quarterly settlement of the import plan has on seasonal fluctuations in Polish foreign trade is a more difficult problem. In the area of imports, the quarterly plans of foreign trade must take into account the domestic customers' demand resulting from the plans for supply, production, investments, and capital repairs. Given the relatively high demand for investment and supply imports, the domestic import customers strive in this connection to avail themselves of the import quotas allotted them as quickly as possible. Sometimes import priority goes to goods which are not the most essential and which would surely not obtain additional means of payment after the allocations had been exhausted. In this way the various units of industry and entire ministries exert pressure on the decision-making centers in the direction of increasing the import limits which have been exhausted too soon. The existence of quarterly import plans and their ongoing monitoring should therefore be considered a form of defense of the general economic interest from this sort of pressure, because the quarterly plans provide for a more even use of import quotas over the period of the year. In this situation domestic customers try to place their own import orders as early as possible in the quarter.

The tendency toward accelerated implementation of the plan over the course of the year does not appear with equal force in all foreign trade enterprises. Among those which handle turnovers of capital goods with a high degree of technical sophistication the tendency finds a natural counterbalance in the form of an extended procedure in putting the subject of imported deliveries into concrete form. As a result in the enterprises the implementation of the import process takes on impetus during the latter half of the year, especially during the final quarter.

It is not in all cases that the focusing of import deliveries in the final month of the quarter is an expression of the above-mentioned parochialism of aspirations of the various individual economic units. I believe that in most cases the factor which determines this phenomenon is rationality in the functioning of the economic elements. It is understandable that the economic unit interested in the continuity of production operations will strive to meet the demand for resources coming from imports somewhat in advance of the moment they are to be put to use. Any excessive lead time brings about a rise in storage costs and a need to see that the imported products are not damaged. The absence of lead time for "on the spot" production must be related to certain tensions and losses in the production process. In certain production areas the absence of this lead time is unacceptable for technological reasons.

Another factor which influences the course of import implementation over the year is the fact that all economic units have a common tendency to take full advantage of the import quotas allocated. An expression of this is the clear concentration of import deliveries each December.

The cause relationship described above between the system of planning and monitoring the implementation of the plan and the seasonal fluctuations of foreign goods turnovers occurs in other socialist countries too, according to the statistics. Hence, we might imagine that the phenomenon of seasonal fluctuations in turnovers also has its own special external source in the realm of exchange with socialist countries, besides internal factors which generate them.

Procedure Adopted for Including Deliveries in the Export and Import Plan

The question arises as to whether seasonal fluctuations in Polish foreign trade as covered in statistical reporting coincide with seasonal fluctuations in realistic flows of goods. Insofar as imports are concerned, they do. Import deliveries are included in the plan at the moment the commodity crosses the customs border of the country, or to put it more exactly, the day it goes through customs. Hence, statistical reporting reliably portrays the real movement of imports. Export deliveries are included in the plan on the basis of another criterion. The moment of the implementation of the export is taken as being the foreign trade enterprise's filing of the factor export (FE) commercial invoice in the Main Statistical Office. This does not have to happen until the exported commodity has been loaded onto the vehicle and the foreign trade enterprise has the shipping document in hand.

The procedure adopted for including export deliveries in the plan contains within it the premise that divergences occur between commodity flows and the reflection of these flows in the statistical reporting. This pertains first of all to export deliveries invoiced collectively. This issue is worth mentioning, because collective invoices are used in exporting large amounts of capital goods as well as complete industrial installations, and therefore concern the export of total deliveries of considerable value.

The use of collective invoices creates a situation in which export deliveries which are actually made successively show seasonal fluctuations in the statistical reporting. Also, some disparity between the real flow of goods and the statistical flow of goods can occur in the event the foreign trade enterprises purposely hold up the commercial invoices. We can be dealing with such a situation when the foreign trade center has fulfilled the plan for turnovers in a given quarter and rather than exceed that plan we are able to include part of the deliveries in the figures for the next quarter.

Insofar as collective invoices help to make seasonal fluctuations of turnovers greater in statistical terms, the above-mentioned practice of holding up invoices means that the dimensions of seasonal fluctuations in the statistical reporting are correspondingly smaller.

Identification of Side Factors

Among the peripheral factors, a special role is played by those which greatly increase the seasonal fluctuations occurring in turnovers of the various foreign trade enterprises. The use of collective invoices is one such factor. Collective invoices are used largely in enterprises which conduct the turnovers of capital goods, especially those implementing the export of complete industrial installations. This sort of export by its very nature somehow involves uneven implementation. Collective invoicing of deliveries makes this unevenness have an even greater impact in the statistical reporting.

The seasonal fluctuation of commodity turnovers is more strongly externalized in the enterprises using technically complicated assortments of commodities. This happens when exports are made up of the more difficult commodity assortments, especially new ones, those with a high degree of technical refining, and those requiring extremely great care in processing or machining.

Another factor exerting an influence on the intensity of seasonal fluctuations is the timespread of export delivery contracting. Where complete agreement on deliveries for the entire year is reached at the end of the previous year, a relatively high degree of even delivery flow is obtained, particularly during the second, third, and fourth quarters, but unfortunately such great lead time in the signing of contracts for deliveries is not a common phenomenon in the realm of exchange with the socialist countries, to say nothing of the capitalist countries, to which deliveries are contracted for incessantly throughout the year.

The next factor which bolsters the seasonal fluctuations in the execution of export tasks is the completing of deliveries composed of individual orders from foreign customers. This applies in particular to foreign orders for a wide assortment of commodities. Items making up such an

order can come from several producers. If the order is made in conjunction with an indivisible letter of credit, as often happens, then its execution cannot occur with successive batches of goods but must be accomplished altogether. It is enough for one domestic producer to miss a deadline for the whole shipment, planned for the middle of the quarter, for example, to be delayed until the end of the quarter.

The completing of deliveries in a specific geographic directions from the viewpoint of rational vehicle use is also important with regard to this issue. This applies to both motor transport and marine transportation. In keeping with the method in effect for including export deliveries in the plan, only exports loaded onto the means of transport are counted. The moment this occurs is determined in marine transportation by the schedule of merchant marine runs. The general economic rationale calls for making full use of means of transportation. This task is particularly difficult from the viewpoint of implementation where there is a low geographic concentration of exports. In a situation where exports are greatly dispersed in geographic terms and we are dealing with a mass of goods which is not too large, in order to make full use of the means of transportation it is necessary to also include deliveries from various foreign trade enterprises to be carried at the same time. This applies mainly to marine transportation. If any of the enterprises fails to make the deadline, then contract fines have to be paid, and in the more important cases the whole export process is held up.

Seasonal fluctuations in the accomplishment of import within individual quarters are affected by imports of capital goods. For example, in 1972 19.2 percent of Poland's imports were earmarked for investments, and in 1975 the figure was 23.3 percent. There has been a systematic increase in these percentages during the past few years, but now the figure has become stable at a level which does not exceed 20 percent by very much. The sizes of imports of capital goods influence its share of outlays for machinery and equipment. Total investment outlays, as well as outlays for machinery and equipment, are those categories of the national economy whose seasonal fluctuations do not fit the seasonal fluctuations of foreign trade turnovers. We can pose the hypothesis that the phenomenon of seasonal fluctuations in investment outlays occurs as the result of the attempts by enterprises carrying out investments to fulfill the plan in financial terms, because we should not expect fulfillment of the plan in the material sense to be subject to such great fluctuations from one period to the next. The influence of such investor behavior on the seasonal fluctuations of foreign trade turnovers can be found in the form of the concentration of import orders in the final months of quarters. Investment equipment acquired in this way makes it possible to improve plan fulfillment, but it comes quite a bit ahead of the real needs of the investors.

Factors related to the failure to perform on time those operations which accompany commercial ones are among the peripheral factors which bring about seasonal fluctuations in the turnovers of Polish foreign trade.

It is a question of any delays related to the sending of commodity documentation down the line between the domestic producer and the foreign trade enterprise, and between the foreign trade enterprise and the Main Statistical Office. These delays can result from the tight personnel situation, lack of discipline among various individual employees, or the faulty functioning of communications.

Overall then we can say that the seasonal fluctuations in the turnovers of Poland's foreign trade are generated by the concurrence of causes of varying scope and force of influence. The major causes structuring the short-term fluctuations in trade exchange with foreign countries are to be found deeply imbedded in the long-standing operation of the mechanism of the operation of the foreign trade enterprises, but nonetheless the specific composition of various factors has an impact on the difference in the extent of seasonal fluctuations of turnovers from one foreign trade enterprise to another.

In order to eliminate or soften the phenomena of seasonal fluctuations in foreign trade turnovers and, more important, its adverse effects, it is necessary, generally speaking, to improve the system of the planning and management of foreign trade and the system of operation of the foreign trade enterprises, a complex process. As we can see from the known causes of this phenomenon, not all of them could be eliminated under the current conditions without incurring adverse consequences. Nonetheless it would be useful to seek solutions aimed at mastering seasonal fluctuations both in the sphere of the methods of central planning (for example, by extending the time-period of the foreign trade plan) and in the sphere of the principles of recording and monitoring the execution of ongoing tasks (for example, by introducing the principle of considering an export task to have been completed at the moment the bank documents are filed), or finally by making improvements in the documentation flow in the production enterprises and in the foreign trade enterprises.

Clearly these are only a few ways of making improvements, and they do not begin to exhaust the question, which is far too extensive for this article. I have tried here to focus my attention on the diagnostic aspect of the phenomenon of seasonal fluctuations in the turnovers of foreign trade.

FOOTNOTES

1. This article came into being on the basis of the author's master's thesis: "Sezonowość obrotów w polskim handlu zagranicznym" [Seasonal fluctuations in turnovers in Polish foreign trade]. This work was written under the scientific direction of Docent dr habilitatus W. Maciejewski and was defended at the Faculty of Economic Sciences of the University of Warsaw in June, 1979.

2. Kalisiak, Z. "Krotkookresowa prognoza handlu zagranicznego Polski na lata 1971-1972" [Short-term projections of Poland's foreign trade in 1971-1972], PROBLEMY HANDLU ZAGRANICZNEGO, No 4, 1973.
3. Czepurko, A. "Aktualne problemy handlu zagranicznego" [Current Problems of Foreign Trade], PTE, 1975.
4. Krakowiak, E. "Zastowowanie analizy spektralnej do badania rytmicznosci m miesiecznych obrotow polskiego handlu zagranicznego" [Application of spectral analysis to investigation of the steady flow of monthly turnovers of Polish foreign trade], PROBLEMY HANDLU ZAGRANICZNEGO, No 11, 1978.
5. The first work to take up information on the mechanism of seasonal fluctuations in Poland's foreign trade is J. Kajarski's work "Rytmicznosc polskiego eksportu w latach 1966-1980" [Rhythmic flow of Polish exports in 1966-1980], published by Institute of Trends and Prices (IKiC), in 1979.
6. Parameter D can be interpreted as the mean annual share of seasonal (uneven) implementation in the course of the variable examined.

$$D = \frac{1}{12} \sum_{j=1}^{12} (s_j - 100),$$

where s_j signifies the seasonal fluctuation index for month j .

7. Sulmicki, P. "Planowanie i zarzadzanie gospodarcze" [Economic planning and management], Warsaw, 1978, p 178
8. Wojciechowski, B. "Handel zagraniczny a dochod narodowy Polski" [Foreign trade and the national income of Poland], Warsaw, 1977, pp 110-11.

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SEJM DEPUTY HIGHLIGHTS 1979 SHORTFALLS

Warsaw SLOWO Powszechnie in Polish 11 Jun 80 p 1

[Editorial commentary by Z. Kom. [Zenon Komender, PAX Sejm deputy]:
"Industry Is Below the Plan"]

[Text] In 1979 the production of many important materials and raw materials was not fulfilled and this had a very serious impact on the technical-material supply status of numerous branches of the economy. This pertains to industrial as well as agricultural raw materials.

The deficit in the value of production amounted to over 56 billion zlotys, therefore, there was a shortage of a considerable quantity of products for the market, for exports, as well as for supply. The level of output of many products was lower than in 1978.

In the Sejm debate on the government report on the fulfillment of the 1979 national socioeconomic plan, much attention is being devoted to the causes of these deficits. One of the numerous causes--and perhaps even the main one--was the worsening of the energy situation in the entire country. Disruptions in the supplies of energy, occurring during the entire year, and especially intensified in the first quarter of 1979, hampered industrial production and accounted for the need to shut down the supplies of electrical energy for the population and for municipal purposes. As a result of the shutdowns, the consumers were not supplied in 1979 with 1.9 billion kilowatts of electrical energy, against 1.3 billion kilowatts in 1978. Power disruptions resulted mainly from delays and incomplete implementation of the investment plan, improper implementation of the repair tasks, as well as a shortage and unsatisfactory quality of the fuel.

In 1979, 1,200 megawatts of new capacity were handed over for exploitation for public utility use [energetyczna zawodowa], which means a 73.2 percent fulfillment of the planned tasks. Neither the two 200-megawatt units in the Polaniec power plant nor the 40-megawatt heating unit in the Gdynia III electric power and heat generating plant were handed over for use. In turn, the repair work in a number of installations was carried out with

considerable delays and lasted until the end of December. The average monthly shutdown of power equipment, resulting from repair faults as well as the poor technical state of the new equipment handed over for exploitation, constituted 7 percent of the installed capacity.

The deficits in industrial production were particularly severe for the entire economy as they applied to many important raw materials and other materials. For example, in metallurgy the raw steel production deficit amounted to 1.1 million tons, that is, 5.3 percent of the planned tasks; rolled products--840,000 tons; and copper 54,000 tons, that is, 13.9 percent. Also, the production plan for zinc, lead, and aluminum was not fulfilled. In the construction materials industry the production of cement amounted to 19.2 million tons and was lower than planned by 5.1 million tons, that is, by 21.1 percent, and also was lower than in 1978 by 2.5 million tons, that is, 11.4 percent. The production of paper and cardboard was lower than planned by 151,500 tons and lower than in 1978 by 78,800 tons, and the production of furniture was lower than planned by 2,303.2 million zlotys.

These shortages impacted in a fundamental manner on the material supply status of the processing, agriculture, and construction industries as well as on the socioconsumer services sphere. Despite this, in 1979 the machinery industry was able to activate the production of new machine tools, as well as machinery and equipment for the needs of the power, railroad transport, and water transport industries as well as for construction and agriculture, in which electronic regulation and control systems have been used to a wider extent than heretofore. The assortment of market products was enhanced, among others, by the activation of the production of new multirange, fully-transistorized radio receivers, new assortments of household chemicals and cosmetics, new fabric designs, new styles of knitwear and clothing products, and new food industry articles.

Unfortunately, a distinct improvement in the quality of industrial production still cannot be seen. Even though--according to the 1979 GUS data, the so-called defectiveness of goods of domestic production supplied to the market increased--the defectiveness index amounted to 2.33 percent against 2.18 percent in 1978. Also, the value of goods returned from foreign countries because of unsuitable quality (71.3 million foreign exchange zlotys against 68.1 million foreign exchange zlotys in 1978) was high. The losses on defects (19.2 billion zlotys against 18.2 billion zlotys in 1978) were considerable. The level of losses in this respect in the machinery industry and in metallurgy was especially considerable.

All this, alongside other factors, impacted negatively on the overall effectiveness of the economy in 1979.

STATUS OF MEDICAL APPARATUS, EQUIPMENT DISCUSSED

Warsaw SLUZBA ZDROWIA in Polish No 20, 18 May 80 p 3

[Article by Tomasz Sienkiewicz]

[Text] As anticipated by its organizers, the International Medical Exhibit [SALMED] has won a permanent place in the schedule of events of the Poznan Fair. Proof of this is the third successive medical fair (18-22 April of this year) which attracted close to 200 exhibitors from 20 countries. A wide assortment of products was shown in a total exhibit area of 12,000 square meters.

Also this time, the Poznan event, one of the larger and better known in the world, was not just of a commercial nature. Physicians, engineers, and also students of medicine from all of Poland, crowded around the exhibit stands for 5 days.

It is not easy, then, to answer the question which exhibitors and exhibits ought to be mentioned here. As I have been able to convince myself, visitors often hold different opinions on this subject after visiting the exhibit. Organizers of health protection probably paid more attention to equipment, whose lack is felt in our country, and took into account the needs which are defined by the government program for the years 1973-1990. At the same time, one could find many new products as regards medical apparatus and equipment, laboratory equipment, dentistry and hospital equipment, and, finally, medicines.

In accordance with the assumptions underlying such fairs, the largest exhibit area was devoted to medical equipment and apparatus. Close to 100 exhibitors displayed many types of diagnostic and therapeutic equipment, surgical instruments, etc. Let us start with the Polish exhibitors.

The Main Center of Medical Technology [COTM], the Health Ministry's only scientific research unit concerned with medical technology, participated in the exhibit for the first time. The COTM debut was apt to please. Among other things, shown there was a prototype cardiographic computer system for determining the danger to the fetus during labor. With interest, visitors

examined equipment utilizing low temperatures, soon to be used in surgery. It is really a surgical probe cooled by liquid nitrogen which makes possible quick freezing of portions of tissues and organs during surgery and bloodless removal of degenerated ones. At this point, a digression comes to mind: At the symposium, "Medical Technology and its Uses," held concurrently with SALMED, the opening lecture was devoted to the topic of use of low temperatures in medicine. There were the following discussion sections: cryobiology, intensive care, computer tomography, information science, neurology, ultrasonics, analytics, and pulmonology. Thanks also to the participation of many outstanding Polish specialists as well as representatives of renowned foreign firms, the symposium became a broad forum for exchange of most recent experience. It again proves to be true that it would be difficult to speak exclusively about the commercial-offer aspect of SALMED.

Many new products were offered by the enterprises united in the Optical and Medical Equipment Association (OMEL) which, as we all know, is the largest domestic manufacturer of medical apparatus and equipment (over 2,500 products). As always, of great interest was constantly improving intensive care, resuscitation, and cardiological equipment. Its principal manufacturer, the Electronic Medical Equipment Plant (TEMED) in Zabrze, displayed an eight-bed intensive care unit, and a four-bed intensive cardiological care unit. These systems, equipped with bedside sets and central stations relaying at duty desks information about all the patients, are being increasingly recognized abroad. Two thousand hospital beds in Poland are already equipped with the apparatus made in Zabrze, and recently the plant has been engaged in making up and assembling entire systems of intensive care and resuscitation. Hospitals in Skierniewice, Bydgoszcz and Sosnowiec have already availed themselves of these services, and many other hospitals are on the waiting list. It is worth emphasizing that the system of complete equipment of intensive medical care departments was built and sold to the plant in Zabrze by the medical equipment repair plants which are Health Ministry units.

Displaying entire departments and units was characteristic of the Polish exhibitors. For the first time, OMEL exhibited also a complete surgical unit, a dental surgery unit, a gynecology unit, and a physical therapy unit.

But let us go back for a moment to TEMED. Among a wide assortment of new products and modernized equipment was shown the first domestic prototype of a semiautomatic hematology analyzer. The AHM-5011 records, within a minute, the number of red and white blood cells and the hemoglobin concentration in an examined sample.

Let us pass on to other exhibitors. The Research and Development Center in Warsaw (ORMED) exhibited, among other things, an already-being-manufactured intensive intraoperative care system designed for four patients. The experimental Department of the TEDHPAN (Institute of Basic Problems of Technology) showed a wide assortment of ultrasonic equipment. One of the

novelties is the UDN-10 obstetrics intensive-care system, consisting of a central station and eight bedside ultrasonic pulse detectors; another is an ultrasonograph of the USO-type, designed for eye and eyesocket diagnosis.

For several reasons it is not possible to ignore cooperative exhibitors, represented by the National Union of Medical and Laboratory Equipment Cooperatives (KAZETMED). First, it produces 20 percent of domestic medical equipment and up to 70 percent of laboratory equipment. Second, the KAZETMED products offered at this year's exhibit were diverse: from dry-air sterilizing apparatus of various sizes to entire laboratories for specialized research. Last, in the most recent period the union has been increasing its production rapidly. The production increase amounts to 25 percent this year, and the increase in the number of the above-mentioned sterilizers will be one-half greater than in 1979. The cooperatives have resumed the production, formerly abandoned, of many needed instruments and pieces of equipment.

In conclusion, I should like to mention a few new products which I have noted in the field of orthopedics and rehabilitation. I have in mind the set of plates and screws for osteosynthesis, already being produced in quantity by the Beldon Microfoundry, and a prototype of a sensational modernized intercom equipment for bed patients, built by the Medical Equipment Repair Plant in Koszalin. Five such pieces of equipment will be produced this year. Two 126-P Fiat automobiles, adapted for invalids with disabilities of upper and lower limbs, also attracted attention. The manufacturer's representative stated that approximately 6,000 automobiles of the first, built earlier, type were already operating in Poland. The Bielsko factory will produce annually 1,000 each of small cars of both types.

There was, however, considerably less orthopedic and rehabilitation equipment than at the previous SALMED. Among the exhibitors were missing the domestic potentates: the Orthopedic Industry Association and the Association of Cooperatives of the Handicapped.

Space limitation makes it impossible to mention other new domestic products. In all, the exhibitors showed many innovations, which proves that in our technology in recent years there has been rapid progress in basic and applied research. Let us hope that it will be easier to find manufacturers for mass production from prototypes, and that the production of simple articles which are needed every day by the health service will not be replaced by production of electronic equipment as is often the case.

One could note that the quality of most Polish products was by no means inferior to that of similar foreign products. Our manufacturers are being increasingly recognized by foreign customers; the VARIMEX export offer includes over 700 types of instruments and also 250 types of medical equipment and apparatus. However, we also have great import needs. The domestic suppliers have been providing until the present time approximately 53 percent

of the total medical equipment and apparatus needed in Poland. This year it is anticipated to hand over for use up to 13,000 hospital beds; consequently, we will be importing the most needed equipment: artificial heart valves, heart stimulators, recording papers, catheters, tubes for intubation, etc., as well as needed spare parts.

Foreign exhibitors were represented by nearly 10 well-known firms from the socialist countries and by over 160 from the West. There were fewer of the smaller manufacturers; on the other hand, there was no lack of large and renowned firms, oriented toward collaboration and cooperation, among others: Picker, Pfizer, General Electric (U.S.), Siemens, Krupp (FRG), Philips (The Netherlands), and Toshiba (Japan).

The Soviet exhibitor, the MEDEXPORT Association, showed surgical instruments and also implant elements--plates for osteosynthesis and endoprosthesis of the hip joint--made of titanium. There was also a set of optical instruments and of electro-optical diathermy instruments, designed, among other things, for the treatment of cataracts. Let us also mention microsurgical instruments including the laser "Knife," still unknown in Poland, used particularly for muscle-wound therapy.

The hallmark of the greatest progress in medical technology was the new computer tomography equipment. During SALMED, the Medical Academy in Poznan put into operation a Picker (U.S.) tomograph, purchased for this educational institution; it uses the newest method to take X-ray layer pictures. The use of this equipment permits avoiding the very dangerous contrast brain scan in children. Computer tomography also yields great benefits in oncological therapy: it is possible to locate exactly the degenerated tissue and to determine, a hundred times more exactly than by other methods, the radiation dosage. Shown at SALMED, the new transmission tomography equipment, based on nuclear medicine (Informatec, Krupp), uses a method of diagnosing which supplements X-ray computer tomography. The X-ray makes it possible to evaluate the structure of an investigated field, and the isotope makes it possible to evaluate the investigation of the function.

Of great interest was analytical equipment and, above all, computerized instrument systems (among others, Corning of Great Britain and Beckmann of Austria), reliable, exact, and simple to operate. They make one realize how much can be achieved by using microcomputers in medical equipment.

Here are a few more highlights. The Hellige Co (FRG) displayed an oxymonitor, a device for measuring partial blood pressure through the skin without taking a blood sample. The Austrian manufacturer, Viennatone, who has been collaborating with our health service for a quarter century now (hearing aids), exhibited equipment for checking the hearing of the newborn. With the aid of this equipment, utilizing knowledge about visual reactions to audible sounds, it is possible to start therapy in the earliest period of a child's life.

In conclusion, again a few words about rehabilitation equipment. Meyer Co, one of world's largest manufacturers of wheelchairs showed, in addition to those, a set of everyday-use devices. Of great interest was a hydraulic lift for transferring a disabled person from a wheelchair. And with this manufacturer, too, we have established cooperation: the Orthopedic Equipment Plant in Warsaw, under a Meyer license, has been producing wheelchairs. This year the plant will deliver 3,500 pieces (including 20 battery-powered wheelchairs) of this most needed equipment which, unfortunately, is still in short supply.

As usual, SALMED was a review of most modern medical technology and an excellent opportunity to compare the achievements of the manufacturers. For example, the Japanese Marubeni Co showed better and less expensive fiber-endoscopy equipment than another manufacturer from the same country, Olympus, our present supplier. This proves that in the trade world SALMED is reckoned with. Computerized diagnostic, therapeutic, and laboratory equipment constituted the bulk of the displays; however, the "people in white" were equally interested in simple equipment, designed to facilitate their everyday work considerably. For example, there was a new type of hospital bed whose back could be raised or lowered; there was an interesting version of a lift facilitating a nurse's care of the patient; there were also automatic operating tables. We still do not have enough equipment of this type, and greater effort could be made to make manufacturers more interested in it.

In accordance with an established tradition, SALMED was not the only specialized exhibit that opened the spring trade fair season. Parallel with it was held, for the fifth time already, INTERMASZ, International Exhibit of Textile, Clothing, and Shoe Machinery. For the first time, Recreation--an International Exhibit of Recreation Equipment--was organized. Exhibited at it, among other things, was playground equipment, camping equipment, sport and tourist equipment. The Fourth Congress of WLRA, World Leisure and Recreation Association, was held concurrently with the exhibit under the motto "Man and His Leisure." It was attended by representatives from 18 European countries and also from the United States and Australia.

The relation of the most recent Poznan exhibit to SALMED is self-evident. The under secretary of state in the Ministry of Health and Social Welfare, Tadeusz Szelachowski, drew attention (among other things) to the need of solving the problem of active recreation, which determines the effectiveness of the treatment of circulatory system diseases. This is not such a simple matter. Note should be taken that according to physiological norms we ought to rest in the open air for 2.5 hours daily. Until the present time, circulatory system diseases have occupied the first place in the death statistics table in our country, and of this number 27,000 do not survive this disease.

SALMED has again won the reputation of being the most interesting of this year's three specialized exhibits. Its standing has been enhanced by the fact the whole spring trade fair was ceremonially opened by the Minister

of Health and Social Welfare, Prof Marian Sliwinski. As usual, SALMED was accompanied by interesting events, organized on our ministry's initiative. We have already mentioned the symposium, "Medical Technology and its Uses". Also held was the conference, "Organization Problems in Designing and Operation of Hospitals," prepared by the Scientific Society for Organization and Administration. It was sponsored by Vice Minister Stanislaw Marcinowski. The Rescue Section of the Polish Anesthesiologists Association, together with the Poznan ambulance service, organized the Seventh Symposium on First Aid. In sum, this year, too, SALMED was the most active of all.

PHOTO CAPTIONS

1. p 3. The Electronic Medical Equipment Plant in Zabrze exhibited, among other things, an eight-bed multiparameter intensive care unit and a four-bed intensive cardiological care unit. The photograph shows a fragment of the first unit.
2. p 3. The recording equipment of an X-ray computer tomograph, made by Philips Co of the Netherlands.
3. p 3. Inhalation anesthesia equipment (type Z 13 Mini-max), made by the X-ray and Medical Equipment Factory (FARUM) in Warsaw.

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POLISH METHODS OF PURCHASING SHIPS DESCRIBED

Warsaw BANK I KREDYT in Polish No 3, Mar 80 pp 80-85

[Article by Wojciech Prokop: "Forms by Which Polish Maritime Shipowners Purchase Ships"]

[Text] The age of the Polish merchant fleet, especially that of the liner shipowner, Polish Ocean Lines [PLO] in Gdynia, has already passed the permissible limit long ago. This comment applies both to the physical depreciation of the ships -- the mean age of PLO tonnage is about 14 years, for example, in connection with which fact more than 65 units should be scrapped, and this means more than one-third of this shipowner's tonnage should turn over -- and also economic depreciation, inasmuch as the Polish Ocean Lines was the only important liner shipowner in the world, even though it was a member of a dozen and some international maritime conferences, to have to wait until 1980 to obtain its first "roll-on-roll-off" ship which could really be called the "roll-on-roll-off" type in the full sense of the word, and please note that it was built at the Finnish Rauma Repola Shipyards.

Tonnage renewal which is more qualitative than quantitative has become a problem of actually capital importance to the Polish maritime shipping enterprises, but at the same time we must express the reservation that it is presently exceptionally difficult, unfortunately, to place orders with Polish shipyards which can boast of modern, worldly ship designs. As the result of this state of affairs the Polish shipowners are forced to place their orders on credit for new tonnage deliveries from foreign shipyards and to repay the credit along with interest charges in freely convertible foreign currency, in order to avoid the rapid obsolescence of their fleet and the accompanying softening of their competitive stance year by year on the international shipping market.

It is therefore the goal of this paper to attempt to present a simplified simulation model with simultaneous application of the comparative analysis method to examine the direct influence on prime costs and the indirect influence on profits of a Polish shipowner which purchases new tonnage abroad on credit or leasing terms. The point of reference, or, in other

words, the basis of comparison here will be the purchase of an identical ship or ships for cash.

On the other hand, however, before we present the circumstances under which the above-mentioned now famous simplified simulation model was constructed, it would be well to mention* very briefly some of the basic assumptions in effect in keeping with the current self-financing system which face the Polish shipowning enterprise. Now a ship purchased abroad on credit (buyer's credit, with a mortgage as a guarantee) is "calculated" in the following way:

On the one hand amortization is a cost-setting item, and on the other hand its value increases the assets of the investment fund;

Interest paid on credit increases the shipowner's total prime costs;

Capital installments repaid reduce each time the assets of the shipowner's investment fund and at the same time increase the statutory fund in the fixed assets of the enterprise;**

The basis for setting the interest on the statutory fund in the fixed assets is the difference between the capital installments already paid and the calculated amortization***, in keeping with the principle that the net value of fixed assets are subject to interest.

Of course this looks much simpler with cash purchases, because the initial value of the tonnage purchased automatically creates an ad hoc reduction in the condition of the assets of the investment fund and at the same time, after a minus correction has been made for the amortization write-offs already taken, it serves as the basis for calculating the interest of the statutory funds in the fixed assets.

On the other hand, this question is decidedly different in the case of leasing, because contrary to the previous two forms, the source of repayment here is the investment funds of a concrete maritime transport enterprise, or its working capital. If we take into account the fact that this form of buying tonnage is a novelty in our economic practice, then we can see that it would be useful to treat of it in somewhat greater detail. In its classic form leasing represents a special sort of rental or lease of mobile or stationary fixed assets, making it possible in practice for the

*This problem has been presented in far greater detail in the article: "The Functioning of Certain Elements of the Self-Financing System of the Maritime Shipping Enterprises After the Example of the Polish Ocean Lines in Gdynia," BANK I KREDYT, Nos 7 and 8, 1979.

**Viz: Paragraph 14 of the Minister of Finance's Directive of 28 July 1976 on the calculation of investment activity costs. MONITOR POLSKI No 32, 1976.

***Ibidem.

enterprise availing itself of it to use these assets without having to buy them simultaneously.* The leasing form of ship purchasing, for example, provides for the lessee-purchaser to assume ownership of the ship under specified conditions after the period of the lease has expired. With the leasing of ships, their rental is usually under "bare-boat" charter conditions which are generally in effect under these circumstances for an agreed-upon period of several or a dozen or more years. This means that unlike a charter for a period of time, when the shipowner covers the fixed costs and the charterer the variable costs plus an additional fee calculated on the basis of either a rate set per deadweight ton per month or a rate for the whole ship set per month or per day,** the shipowner leasing the foreign ship under "bare-boat" charter conditions and paying the rental (hire) to the formal owner obtains the "naked" ship solely for his own use. The shipowner leasing the ships commands his own crew on such a ship and covers all the costs related to the possession and operation of the tonnage, including the costs of insurance, repairs, and material supply, and the costs of maintaining the crew (wages, food), bunkers, and so on. Under the conditions specified in the leasing agreement, the shipowner also has the right to sail the leased ships under the ensign of his own country. Unlike the purchase of ships on credit, where the repayment of borrowed capital and the interest is covered directly by the debtor in most cases, and these two elements together tend to decline as the credit is repaid (an even installment of capital is repaid, and the credit costs decline), rental (hire) is identical for the entire duration of the leasing period and consists of three elements: the capital installment, credit costs, and the leasing enterprise's profit. This means that in the case of hire-purchase under leasing principles, applying a "bare-boat" charter at the same time, the repayment of credit is calculated in the leasing rate, and in this connection is paid out of the shipowner enterprise's working capital.***

It is proper to emphasize here that at the present time there are two forms of leasing employed in the practice of Polish shipowning enterprises. They are the following:

*Viz: "Vademecum Handlu Zagranicznego" [Foreign Trade Guide], Warsaw, PHZ, 1976.

**Viz: S. Borowiec, S. Ladyka, T. Lodykowski: "Ekonomika Transportu Morskiego" [Maritime Transport Economics], Warsaw, State Economics Publishing House [PWE], p 30.

***The cost of ship charter or its outfitting (containers) is converted to zlotys in circulation and paid on the weight of ongoing operating calculations. This coincides with Paragraph 3 of Minister of Finance Directive No 29, dated 25 April 1977, on permission for the state enterprises Polish Ocean Lines and Polish Steamship Company to engage in certain turnover operations in foreign-exchange values (unpublished).

a) Leasing under the conditions of a "Conditional Sales Agreement" usually adopted in the leasing of containers or other special equipment,

b) Leasing under the conditions of "Lease Purchase" used in the lease purchase of floating tonnage.

In essence the difference consists of the fact that under the conditions of the "Conditional Sales Agreement," with each rental payment part of the fixed assets which are the subject of the leasing arrangement automatically is transferred to the ownership of the payer, but under the conditions of "Lease Purchase," the lessee-purchase receives as his property the subject of the leasing agreement for the symbolic sum only after the final payment is made. In practice this means that in the case of the sudden "breakdown" in the finances of the leasing enterprise, the first of the two forms presented above is "safer" for the payer. One other thing is the fact that with leasing under the conditions of "Lease Purchase" the Polish shipowner leasing the ship does not reduce the accumulations worked by this tonnage by the interest on the fixed assets until the final rental payment is made, despite the actual full use of the ship, because during the time the leasing agreement is in effect the ship or ships which the shipowner is using under "bare-boat" charter conditions are not formally his property and as such not only are not amortized but are not reported on in any form in the liabilities of the balance-sheet of the leasing shipowner, in the item dealing with the size of the direct funds financing fixed assets or legal and nonmaterial values.*

Methodological Assumptions

As a basis of comparison we took the cash purchase of a medium-sized "Container-Roll-on" ship priced at about 30 million dollars, which is the approximate equivalent of 1.2 billion currency zlotys. A comparative analysis was made here using currency zlotys, thereby eliminating such problems as the currency of the contract versus the currency of payment, or the problem of changes in foreign currency rates. In addition, to simplify things the analysis does not take into account the influence exerted on the condition of the assets of the shipowner's investment fund by the part of normal profits which the "Container-Roll-on" ship obtains during the specified time. On the other hand, we did take the following into account:

The influence exerted on the shipowner's total prime costs by amortization write-offs amounting to 6 percent per year for the first 10 years of the ship's operations (in purchases for cash or credit), the interest on the

*Owing to the fact that leasing is just now coming into wider practice in the Polish shipowning enterprises, this problem had not been resolved in a final way in terms of accounting records, up to and including the year 1979.

the credit incurred (for purchases on credit), and the rental payments (for purchases under leasing conditions);

Influence exerted on the assets of the shipowner's investment fund by amortisation write-offs (purchase for cash and purchase on credit) and the repayment of capital installments (purchase on credit);

Influence exerted on the amount of profit of interest on fixed assets amounting to 2 percent per year of the net value of fixed assets (purchase of a ship for cash and on credit).

The analysis period was set at 8 years, falling concretely between 30 June 1979 and 30 June 1987. This was dictated by the fact that on the Eurocredit market the usual period for the repayment of intermediate-term syndicated credit is 8 years from the date the ship is delivered to the party obtaining the credit, because in the comparative analysis the assumption was made that a ship purchased on credit is financed under the classic Libor (London Interbank Offered Rate) principles, with the reservation that the floating interest rate applied in this instance was not used, but it was assumed that it would have the nature of a "constant" and amount to an annual rate of 12.5 percent. We thereby eliminated, for the sake of simplicity, interest-rate fluctuations under Libor's notations dependent on the current rate of the American dollar. Taking into account the financial "standing" of the Polish shipowners it was assumed that the bank margin (spread), which is one of the fixed elements of syndicated credit costs on the Eurocredit market* was 1.5 percent per year. Thus, the total costs of intermediate-term credit in the model presented amount to 14 percent per year and are very close to those currently in effect. On the other hand, concerning the size of the rental payments for the lease-purchase of a ship under leasing conditions, it was assumed that it would be fixed** during the entire period of the lease and consist of the capital installment plus 11.5 percent per year interest on the capital committed and 2.4 percent per year of the leasing enterprise's profit. At the same time it should be mentioned that in order to give some variety to the comparative analysis, it was assumed for the purchase of a ship on credit or under leasing conditions that there would be two variants, as follows:

Variant I: The ship is delivered to the shipowner on 30 June 1979, and there is a payment exemption period of 6 months,

Variant II: The ship is delivered to the shipowner on 30 June 1979, but the payment exemption period is one year.

*This problem was discussed in more detail in RYNKI ZAGRANICZNE, No 68, 1979.

**In practice, as has already been mentioned, leasing (hire) is steady in terms of the size of payments made for the entire period of the lease. Its internal structure, however, is subject to certain changes, which, of course, are of no significance from the viewpoint of the lessee-purchaser's costs related to this type of transactions

Results

The influence exerted on prime costs, the condition of the assets of the investment fund, and the sums turned over to the state budget from the interest on the firm's own funds financing the fixed assets and the legal and nonmaterial values reducing the accumulations earned by the shipowner are presented in the following tables:

Table 1 concerning the purchase of a ship for cash,

Table 2 concerning the purchase of a ship on commercial credit with a payment exemption period of 6 months (variant I) or one year (variant II),

Table 3 concerning the hire-purchase of a ship under leasing conditions with a payment exemption period of 6 months (variant I) or one year (variant II).

They show several interesting aspects of the problem mentioned, as follows:

1. During the 8 years from the moment the ship is turned over to the shipowner for operation, the condition of the assets of the investment fund declines altogether by the same amount (624 million) regardless of whether the ship is bought for cash or on credit. Of course, the best situation in this regard is for purchase under leasing conditions.
2. The total amounts turned over to the state budget from interest on net fixed assets are 250 percent as great when the ship is purchased for cash as when the shipowner buys the tonnage on credit. Here it is interesting that with a credit purchase with a 12-month payment exemption period, the amount turned over to the state budget altogether from interest on the fixed assets is nearly 10 percent less than with a 6-month payment exemption period. With hire purchase under leasing conditions this problem does not occur.
3. The most serious differences occur in relation to the total influence exerted over the course of the 8 years by the various forms of tonnage purchase on the total prime costs to the shipowner. The situation which is decidedly the most favorable in this regard occurs when the ship is purchased for cash, because amortization is the only element structuring the cost. When the tonnage is bought on credit, the interest on the credit incurred is an additional, important element of the cost. What is of note here is that for the 12-month payment exemption period the total interest on the credit is nearly 6 percent higher than with a 6-month payment exemption period. Hire purchase of a ship under leasing conditions without a doubt increases the total prime costs of the shipowner most greatly, because each rental payment made is part of the cost. And here too there is a difference in the influence on costs, depending upon the payment exemption period, except that it is far smaller in terms of percent, because for a 12-month payment exemption period the total prime costs of the shipowner are 2 percent greater than for a 6-month payment exemption period.

Table 1. Influence on Total Prime Costs, Investment Fund Resources, and Interest Rate of the Fixed Assets of a Ship-Owner Buying a Ship for Cash (in thousands of zlotys)

(c) No. values mln	(a) Σp_{17} as effective lower values (d) Σp_{17} as effective lower values (e) Σp_{17} as effective lower values			(b) Σp_{17} as effective lower values (f) Σp_{17} as effective lower values (g) Σp_{17} as effective lower values			(k) Kwota opoznaczenia wzrostu inwestycji mln
	1	2	3	4	5	6	7
1979	+36 000	—	+36 000	+36 000	—1 200 000	—1 164 000	—11 640
1980	+72 000	—	+72 000	+72 000	—	+72 000	—21 640
1981	+72 000	—	+72 000	+72 000	—	+72 000	—20 640
1982	+72 000	—	+72 000	+72 000	—	+72 000	—18 940
1983	+72 000	—	+72 000	+72 000	—	+72 000	—17 520
1984	+72 000	—	+72 000	+72 000	—	+72 000	—16 800
1985	+72 000	—	+72 000	+72 000	—	+72 000	—16 640
1986	+72 000	—	+72 000	+72 000	—	+72 000	—12 200
1987	+36 000	—	+36 000	+36 000	—	+36 000	—6 940
Σp_{17} 1987	+576 000	—	+576 000	+576 000	—1 200 000	—624 000	—140 520

Source: author's calculations

[Key]:

- (a) Influence on total prime costs
- (b) Influence on resources in investment fund
- (c) At year's end
- (d) Depreciation
- (e) Interest on credit
- (f) Total columns 2 + 3
- (g) Depreciation
- (h) Credit installments
- (j) Total columns 5 + 6
- (k) Interest rate of fixed assets reducing accumulations
- (m) First half of the year
- (n) Total

Table 2. Influence on Total Prime Costs, Investment Fund Resources and Interest Rate of Fixed Assets of Ship-Owner Buying a Ship on Credit (In thousands of zlotys)

(a) VARIANT I — preliminary above balance (14 not payments on paid entry)									
(d) No. above entry	(b) Entry on balance above balance			(c) Entry on credit balance (investment)			Kursy opłacenia rodzów walut początkowych ob- rotowych		
	(e) entry	(f) balance	(g) sum (f+g)	(h) entry	(i) not balance	(k) sum (e+i)			
1	2	3	4	5	6	7	(n)		
									8
1719	+ 36 000	+ 342 710	+ 378 710	+ 36 000	- 73 000	- 37 000	- 390		
1740	+ 73 000	+ 341 750	+ 414 750	+ 73 000	- 150 000	- 77 000	- 2 340		
1761	+ 72 000	+ 320 750	+ 392 750	+ 72 000	- 150 000	- 78 000	- 3 900		
1782	+ 72 000	+ 97 710	+ 171 710	+ 72 000	- 150 000	- 78 000	- 5 460		
1793	+ 72 000	+ 78 710	+ 150 710	+ 72 000	- 150 000	- 78 000	- 7 020		
1794	+ 72 000	+ 57 710	+ 129 710	+ 72 000	- 150 000	- 78 000	- 8 580		
1805	+ 72 000	+ 36 710	+ 108 710	+ 72 000	- 150 000	- 78 000	- 10 140		
1806	+ 72 000	+ 15 710	+ 87 710	+ 72 000	- 150 000	- 78 000	- 11 700		
I payments 1807	+ 36 000	—	+ 36 000	+ 36 000	- 73 000	- 37 000	- 5 240		
(n) I payments 1807	+ 578 000	+ 716 000	+ 1 294 000	+ 578 000	- 1 200 000	- 624 000	- 53 770		
(o) I payments 1807									
(p) VARIANT II — entry above balance (15 not payments on paid entry)									
1879	+ 36 000	+ 140 000	+ 206 000	+ 36 000	—	+ 36 000	—		
1900	+ 73 000	+ 131 200	+ 224 200	+ 73 000	- 140 000	- 67 000	- 1 040		
1901	+ 72 000	+ 120 000	+ 192 000	+ 72 000	- 140 000	- 68 000	- 2 600		
1902	+ 72 000	+ 100 000	+ 172 000	+ 72 000	- 140 000	- 68 000	- 4 160		
1903	+ 72 000	+ 80 000	+ 152 000	+ 72 000	- 140 000	- 68 000	- 5 720		
1904	+ 72 000	+ 61 000	+ 133 000	+ 72 000	- 140 000	- 68 000	- 7 280		
1905	+ 72 000	+ 39 200	+ 111 200	+ 72 000	- 140 000	- 68 000	- 8 840		
1906	+ 72 000	+ 18 000	+ 90 000	+ 72 000	- 140 000	- 68 000	- 10 400		
I payments 1807	+ 36 000	—	+ 36 000	+ 36 000	- 80 000	- 44 000	- 5 140		
(n) I payments 1807	+ 578 000	+ 716 000	+ 1 294 000	+ 578 000	- 1 200 000	- 624 000	- 53 770		
(o) I payments 1807									

Source: Author's calculations

[Key]:

- (a) Variant I -- half-year payment exemption period (16 installments each 6 months)
- (b) Influence on total prime costs
- (c) Influence on investment fund resources
- (d) At year's end
- (e) Depreciation
- (f) Interest on credit
- (g) Total of columns 2 + 3
- (h) Total 5 + 6
- (i) Fixed assets interest rate reducing accumulations
- (j) First half of year
- (k) Total
- (l) Variant II -- year's payment exemption period (15 installments each 6 months)

Table 3. Influence on Total Prime Costs, Investment Fund Resources, and Fixed Assets Interest Rate of Ship-Owner Buying a Ship Under Leasing Conditions (in thousands of zlotys)

(a) WARIANT I - pobyty obcy kraj (15 lat d-razem z pobytem na polu obcy)							
(b) No. obcy obcy	(c) Wpływ na całkowite koszty obcy			(d) Wpływ na fundusze inwestycyjne		(j) Koszt operacyjny na fundusze inwestycyjne (j) obcy	
	(e) amortyzacja	(f) odsetki od kredytów	(g) --	(h) amortyzacja	(i) odsetki od kredytów		
1	2	3	4	5	6	7	
1979	—	—	+ 319 625	—	—	—	
1980	—	—	+ 339 250	—	—	—	
1981	—	—	+ 319 250	—	—	—	
1982	—	—	+ 339 250	—	—	—	
1983	—	—	+ 329 250*	—	—	—	
1984	—	—	+ 339 250	—	—	—	
1985	—	—	+ 339 250	—	—	—	
1986	—	—	+ 339 250	—	—	—	
1987	—	—	+ 319 625	—	—	—	
(k) 1 półrocze 1987	—	—	+ 1 914 000	—	—	—	
(m) Łącznie	(n) WARIANT II - leasing obcy kraj (15 lat d-razem z pobytem na polu obcy)						
1979	—	—	—	—	—	—	
1980	—	—	+ 340 000	—	—	—	
1981	—	—	+ 340 000	—	—	—	
1982	—	—	+ 340 000	—	—	—	
1983	—	—	+ 340 000	—	—	—	
1984	—	—	+ 340 000	—	—	—	
1985	—	—	+ 340 000	—	—	—	
1986	—	—	+ 340 000	—	—	—	
1987	—	—	+ 340 000	—	—	—	
(k) 1 półrocze 1987	—	—	+ 1 914 000	—	—	—	
(m) Łącznie	—	—	+ 1 914 000	—	—	—	

Source: Author's own calculations

[Key]:

- (a) Variant I -- half-year payment exemption period (16 paid rentals each 6 months)
- (b) At year's end
- (c) Influence on total prime costs
- (d) Influence on investment fund resources
- (e) Depreciation
- (f) Interest on credit
- (g) "Hire"
- (h) Credit installments
- (j) Fixed assets interest rate reducing accumulations
- (k) First half of the year
- (m) Total
- (n) Variant II -- year-long exemption period (15 paid rentals due at half-year intervals)

Table 4

	(a) Formy zakupu tonażu	(b) Wpływ na całkowite koszty własne powiększone o oprocentowanie środków trwałych (w mln zł)	(c) Relacja (w punktach)
	1	2	3
(d)	Zakup za gotówkę	716	1,00
(e)	Zakup na kredyt		
(f)	a) 6 miesięcy karancji	1 566	1,00
(g)	b) 12 miesięcy karancji	1 583	1,03
(h)	Zakup leasingowy		
(f)	a) 6 miesięcy karancji	1 914	2,67
(g)	b) 12 miesięcy karancji	1 956	2,73

Source: Tables 1, 2, and 3

[Key]:

- (a) Form of purchase of tonnage
- (b) Influence on total prime costs, increased by interest on fixed assets (in millions of zlotys)
- (c) Ratio (in points)
- (d) Cash purchase
- (e) Purchase on credit
 - (f) with 6-month exemption period
 - (g) with 12-month exemption period
- (h) Lease-purchase

Conclusions

It is assumed that both the level of the shipowner's total direct costs and the size of the amounts taken for the state budget from interest on net fixed assets in the possession of the given maritime shipping enterprise have an influence on the size of the profits earned by that economic organizational unit and destined for further internal distribution* in Table 4, which presents ratios based on the data in Tables 1 and 2 (columns 4 and 8) and Table 3 (column 4). Given these assumptions we can see the following:

The total burden of prime costs increased by the amount of interest on fixed assets turned over to the budget (see column 2 of Table 4),

*A more detailed distribution of profit in the Polish shipowning enterprises was presented in BANK I KREDYT, No 7, 1979.

The ratios between the sizes thus presented, given the simultaneous assumption that the total burden of the shipowner's prime costs altogether over the 8 years from buying the ship for cash and the total amount of the interest which was therefore turned over to the budget during the same time are equal to one point (see column 3 of Table 4).

From this we can see that purchasing the tonnage for cash is the most advantageous to the shipowner from the viewpoint of the influence on the earned profit allocated for further internal distribution, because the burden which the maritime shipping enterprise pays in additional costs and interest on fixed assets turned over to the budget, thereby reducing the amount of profit earned in buying a ship on credit is almost double, and for rental purchase under leasing conditions it is nearly triple. One can and perhaps even should reverse the interpretation of the results presented in Table 4 that is, tonnage bought on credit in comparison to the cash purchase of a ship -- this would hold true even more for a ship bought under leasing principles -- should be used decidedly better and more fully by the shipowner in order to "make up for" the adverse influence which these two forms have on the level of the enterprise's earned profit allocated further on for internal distribution. In other words this means that before a decision is made to purchase tonnage on credit principles and especially under leasing conditions, the shipowner should have a complete familiarity with the current and future real shipping possibilities for the service or line to be served by the new tonnage and should undertake appropriate soliciting campaigns ahead of time. Of considerable importance here is also the shipowner's familiarity with the situation in the realm of the technical (qualitative) possibilities of having newly purchased and usually highly specialized tonnage use ports, and this means not only the ports of departure and destination but also those en route.

Against the backdrop of the remarks presented there is still one more problem, a paradoxical one. Now, contrary to the principle commonly adopted worldwide that a credit purchase has among other virtues the advantage that it does not force the debtor to spend his own funds immediately and thereby makes it possible for him to commit them, if he has them, at the same time to any other area, in practice Polish maritime shipowners are deprived of that privilege, because the purchase of tonnage on credit abroad is not the result of an analysis of the advisability of such a transaction compared to that of the cash purchase of the ship but is rather the result of simple necessity. Otherwise it would probably be altogether impossible to modernize the fleet at all, owing to the fact that the Polish production shipyards are not accepting orders. As a result, for example, although the Polish Ocean Lines have their own financial resources which enable them at any moment to buy several modern highly specialized units from the Polish shipyards, they are practically forced to buy abroad on credit for convertible currency while at the same time -- and this should be clearly stated -- unproductively "freezing" the above-mentioned funds of their own in appropriate bank accounts, because according to the self-financing system presently in effect, these funds cannot basically be committed to

purposes other than the planned domestic purchases of tonnage.* The rigid line which presently exists between resources allocated for operations and resources allocated for developmental activity (investment) by the nature of things not only creates additional difficulties for the Polish maritime transport enterprises under current conditions but is also a factor which to a large extent blurs the possibility of making an ongoing complete and objective assessment of the shipowner's financial-payment situation.

Final Remarks

The "fragmentary" simulation model presented and the conclusions put forth on the basis of it are certain to give rise to a number of doubts and some controversy, but it should be agreed that the current level of holdings of the Polish commercial fleet, given its competitive stance and "penetration power" on the international shipping market, is beginning to cause more and more uneasiness. In this connection the problems concerning the forms and methods of modernization -- and this must be in a relatively short period of time -- of the tonnage in the possession of the Polish shipowners have taken on considerable importance. This is one reason why the problems presented in this paper should be treated as an attempt to give the specific features, scope, and scale of the difficulties which go along with them. Here it is worth emphasizing that the need for modernizational and structural changes in the tonnage presently available and being used faces not only the Polish shipowning enterprises but also a number of similar enterprises in highly advanced capitalist countries. It will therefore be interesting to present for the sake of comparison the solutions and measures which have been introduced by the governments of the Federal Republic of Germany, the United States, and Japan in this area.**

FRG

At its final 1978 meeting, the Council of Ministers of the federal government agreed on the taking of steps to improve the financial situation of shipping enterprises and to make it easier for them to make investment decisions. Among other things this will involve the following:

*Viz: Ibidem and BANK I KREDYT, No 8, 1979.

**Information taken from JOURNAL DE LA MARINE MARCHANDE ET DE LA NAVIGATION AERIENNE, 4 April 1979 No 3081, 11 Jan 1979 No 3082, 25 Jan 1979 No 3084, and FAIRPLAY, 21-28 Dec 1978, No 4973, published in 1979 in Nos 2 and 3 of the BIULETYN INFORMACYJNY [Information Bulletin] of the Liner Shipping Research and Development Center [Ośrodek Badawczo-Rozwojowy Żegluga Liniowej], Polish Ocean Lines, Gdynia.

An interest rate discount of 2.5-3 percent, which will cost the federal budget 120-160 million deutsche marks, and this discount is for a period of 3 years and is nonrepayable, if during these 3 years the shipowner places an order with a domestic shipyard for the construction of a ship;

Steamship enterprises have been given credit guarantees which will permit them eventually to resolve their payment problems possibly.

United States

During the fourth quarter of 1978 the American shipping firm Waterman Steamship signed a contract with Sun Shipbuilding for the construction of two Container-Roll-on ships of 23,500 deadweight tons for use on the lines from the east coast of the United States to Northern Europe. The cost of building the two units is to amount to about 137 million dollars, except that about 49 percent of this amount is to be covered by a subsidy awarded on the basis of a program of the U.S. Maritime Administration (MarAd), the Construction Differential Subsidy, or CDS.

Japan

The Japanese ministry of transport and finance recently came to an agreement on the principles for subsidizing domestic steamship enterprises. It has been determined that financial assistance is to be granted to the shipowner in the form of interest rate discounts amounting to 3.5 percent on container ships and methane gas carriers, 3 percent for conventional general cargo ships, and 2.5 percent for tankers. The shipowners will be able to avail themselves of loans granted by the Japan Development Bank for up to 75 percent of the cost of building a container ship or methane gas carrier and 65 percent of the cost of other types of ships. In connection with the decisions made, interest on loans granted by the Development bank or by commercial banks will be 2.8 percent on container ships or methane gas carriers, 3.3 percent on conventional general cargo ships, and 3.8 percent on tankers. These government decisions pertained to the tonnage covered by the program for the expansion of the Japanese fleet for fiscal year 1979 and totalled about 700,000 gross register tons, which is about a million deadweight tons.

The examples presented clearly show that the governments of highly advanced capitalist countries are adopting a policy of state intervention to facilitate the development of the fleets of domestic shipowners. Against this background it becomes particularly important to introduce far greater flexibility in the self-financing system under which the domestic enterprises of maritime transportation are presently operating, particularly since this will not represent any exception but will be the logical consequence of the changes occurring in this regard in the maritime shipping enterprises of the highly advanced capitalist countries.

Another argument which in the opinion of the author calls for the absolute necessity of appropriate monitoring of the self-financing system under which the Polish shipowners are presently operating is the recently observed attempt to introduce elements of state intervention also into such a specific form of tonnage purchase as ship leasing undoubtedly is. Now, in the opinion of the chairman of Deutsche Leasing AG, Albrecht Dietz, it is essential for the German steamship firms to find the new capital needed to maintain the fleet and that one of the solutions is the leasing of ships.* To account the solutions proposed by Deutsche Leasing AG, the comparison for leasing a ship which had been ordered would be as follows:

	percent
Ship cost	100
Federal government assistance	17.5-25
Market value of ship on the domestic market after 8 years	25
Total amortization after 8 years of payments	57.5-50

To recapitulate the past solutions, we should once again emphasize the gravity of the situation in the realm of modernization of the fleet of the Polish Merchant Marine, especially the liner fleet. Appreciating this, the Polish Ocean Lines is presently conducting technical-financing negotiations concerning construction for the following needs: five roll-on-roll-off ships of about 22,000 tons for the Australian line, five roll-on-roll-off ships of about 7,000 deadweight tons to serve the Mediterranean lines, and four roll-on-roll-off ships for European lines. In addition, at the threshold of May 1979 a large new contract was signed in Paris to build four general-purpose Container-Roll-on ships of 22,000 deadweight tons with a transport capacity of 1,417 containers (20-foot equivalent units) in a set, for PLO's needs at the French shipyards. Handling on these ships will be done using both the vertical (lift-on-lift-off) system and the horizontal (roll-on-roll-off) system, and the ships will be designated to serve the North American line.*

It follows that in striving to adapt to the present trends in world liner transport service, the PLO fleet will be expanded largely in the direction of the development of tonnage entirely subordinated to modern, high-capacity technologies of cargo transport and handling which insure good economic effects, provided of course that the operation is correct. The Polish liner shipowner's introduction for use by 1985 of a relatively wide range of roll-on-roll-off ships (18 units) will make it possible not only to improve in a decisive and noticeable way the competitive stance of a number of lines vis-a-vis other companies but also -- and this is important -- to help speed up greatly the deliveries of industrial goods exported by Polish foreign trade.

*Ibidem.

**Viz: H. Dehmel, J. Drzemczeski: "Polskie Linie Oceaniczne w 50-leciej Polskiej Żeglugi Liniowej" [The Polish Ocean Lines on the 50th Anniversary of Polish Liner Transport Service], *TECHNIKA I GOSPODARKA MORSKA*, No 8, 1979.

***Ibidem.

Also important is the fact that the introduction of the above-mentioned highly specialized tonnage should in some sense force a decided improvement in the work of Polish seaports in the transshipment of general cargo. This is after all a condition sine qua non for the proper, advantageous macroeconomic operation of this type of highly specialized tonnage on the part of the Polish liner shipowner.

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BRIEFS

FIRST CONTAINER-ROLL-ON SHIP--Construction of the first of four container ships of the con-ro [container-roll-on] type that have been ordered by the Polish Ocean Lines [PLO] was initiated at the Chantiers Navals de la Ciotat Shipyards in France. As it was previously reported, they will be the largest ships of the ocean liner company and some of the most modern ships in the Polish merchant marine. These container ships, which have a dead-weight of approximately 22,000 tons, will have 5 cargo holds, in which containers will be loaded vertically--lift-on lift-off--and 1 cargo deck on the stern for cargo to be loaded horizontally--roll-on roll-off. The total capacity of all cargo holds and deck on each of these ships is 1,417 twenty-foot containers. These ships will be capable of moving in the North Atlantic, because they will be operated on this route at a speed of more than 20 knots. Much of the equipment, including the main 29,000 horsepower Sulzer-Cegielski engine and auxiliary engines, is domestically produced and has already been delivered to the shipyards in La Ciotat. The first container ship will be launched and christened in August, 1980. [Text] [Gdansk DZIENNIK BALTYCKI in Polish 30 May 80 p 3]

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DYNAMIC EQUILIBRIUM, EFFICIENCY IN ECONOMIC GROWTH

Bucharest ERA SOCIALISTA in Romanian No 9, 5 May 80 pp 12-15

[Article by Dr Gheorghe Sica, a director in the State Planning Committee: "Dynamic Equilibrium and Efficiency in the Process of Economic Growth"]

[Text] The fundamental options regarding economic and social development established at the 12th Romanian Communist Party Congress continues to call for a sustained economic growth and outlines with deep significance the goal that around 1985 Romania will enter the ranks of the medium developed nations, going beyond the status of a developing nation. In the contemporary world, there has practically been a consensus regarding the fact that nations can be divided into three broad categories with regards to their status of economic development: developing nations, medium developed nations and developed nations. The criteria for evaluating each stage are complex, with the main stress being placing on the volume of national income and the amount per inhabitant, and determining elements regarding the standard of living, quality of life, labor productivity and other factors of a quantitative nature.

As a result of applying the party's policy, Romania currently has attained a level of development that allows it to propose as its objective entering the ranks of the medium developed nations around 1985. Actually, compared to 1950, which can practically be considered the first year when our country had a complete annual plan, the social product had grown, in 1979, 15.7 fold, national income 16.4 fold, total industrial production over 35 fold, and the volume of fixed assets had reached the impressive figure of 1,700 billion lei.

Significant qualitative structural changes have been achieved in the national economy, both by branch of the economy and in territorial distribution. There has been a priority development of the branches of the processing industry dealing with technical progress. Our economy has developed in a healthy manner, monetary circulation has been good and the evolution of prices has usually been within the planned limits. The

decisive factors in the modernization of structures were stimulated, especially through the judicious direction of investments, the promotion of technical progress and scientific advances, the growth of the number and quality of labor resources, the active participation of Romania in the international division of labor and the improvement of social structures.

From 1960 to 1977, the percentage of the population working in agriculture was reduced by one-half, an evolution specific to the developing nations and modernization. At the same time, the growth in the number of people working was out-stripped by its supply with fixed assets, continually increasing the technical supply to labor, which in 1978 was over seven times greater than in 1950. Similarly, it is remarkable that the percentage of production fixed assets within the total amount of fixed assets in the economy has substantially increased, totalling between 72.1 percent and 74.1 percent after 1970.

The qualitative leap by the Romanian economy is also shown in the structure of exports. If in 1960 machinery, equipment, vehicles, chemical products and consumer industrial goods represented 27.2 percent in the total amount of exports, in 1979 these industrial goods accounted for 53.4 percent.

There was growth in the general level of education and the degree of qualification of the labor force, which marks one of the basic structural changes in the national economy.

It is important to stress that the efforts directed towards sustained economic growth were accompanied by an increase in the real income per inhabitant. Compared to 1960, in 1975 this was nearly 2.3 times greater, while last year it was over 2.8 times greater. In this fact, it can be seen that all economic development serves the achievement of the fundamental objective of our socialist society - raising the welfare of the people.

In the 1981-1985 five year plan, economic growth will be continued at sustained rates. As is pointed out in the Directives of the 12th Party Congress, net industrial production will grow at an average annual rate of nine to ten percent, social product at a rate of 6-6.6 percent and national income 6.7 to 7.4 percent. There will be a powerful extension of modernization in the structure of the economy. In comparison to 1980, in 1985 production in the electronics industry will be, according to plans, approximately 2.4 times greater, in the cutting machine tools industry approximately 2.2 times greater, in the precision mechanics industry 2.7 to 3 times greater, in the production of plastics nearly 1.7 times greater, in the production of synthetic threads and fibers 1.6 to 1.8 times greater and so forth.

"The carrying out of the provisions of the new five year plan," stressed comrade Nicolae Ceausescu in his report to the congress, "will accelerate the development of the country both in the area of the technical-material base and in the organization of society, ensuring the growth of the national income per inhabitant, the improvement of the living conditions of the masses and the raising of the level of education, science and culture, and the general degree of civilization for our people. Thus, Romania will go beyond the stage of a developing socialist nation and become a medium developed socialist nation, entering a stage of the greatest significance in carrying out the party's Program on the way to a communist society."

Economic science in general and the theory of economic growth in socialism in particular pointed out the fact that proportional development constitutes a general requirement and a characteristic of all social-economic formations. For any society it is an objective necessity to have the most judicious distribution of the means of production and the labor forces among the branches and areas of social production and to organize activities in accordance with the rational and real needs of society. This agreement between social requirements and social efforts represents, in a practical sense, the general economic equilibrium or macroeconomic equilibrium which any development process pursues.

The state of proportionality is a form of expression of the macroeconomic equilibrium which includes all phases of reproduction and which, viewed at a given moment, is equivalent to the static equilibrium. But, the most important thing is to ensure the dynamic equilibrium, that is, the equilibrium at different moments or periods of time in the process of economic growth. In such a view, essential factors in economic development appear to be technical progress, the volume and efficiency of resources used, the results of social activities, the level and structure of social consumer needs, and so forth.

Certainly, the dynamic equilibrium cannot be and should not be seen in a narrow view in the sense of assigning resources equally or in certain fixed proportions among the branches and sub-branches of the national economy, but in the sense that in each stage resources are allocated on a priority basis to those branches that give the main thrust in economic growth. As a result, the formation and maintenance of dynamic equilibrium in the economic organism represents a problem of maximum economic importance and of high social-political responsibility.

Our party's view regarding economic growth and the overall development of the country has in mind the dynamic aspects and the fact that that under the conditions of the contemporary world, especially during the technical-scientific revolution that is occurring during this end of the century,

nothing is static and everything must be approached with an evolutionary, long-term view. Romania's entry into the ranks of the medium developed nations, an objective with great economic and social significance, will require the carrying out of certain energetic battles on a broad front which, synthetically, will include: the sustained promotion of intensive aspects in the carrying out of technical-economic processes and the achievement of the objective of moving to a new quality; the acceleration of the process of modernization of the structures of the national economy through priority growth in the advanced processing branches; the growth of the contribution of agriculture to increasing national income through the carrying out of a profound agrarian revolution; the sustained development of the technical-material base and the broadening of our own bases of raw materials and energy; the country's sustained and efficient participation in world trade; and, the increase in the standard of living under conditions of sustained growth in labor productivity and national income.

These objectives and tasks reflect the ever more accentuated tendency to give priority to the qualitative, intensive aspects in the process of development and sustained growth in labor productivity and national income, the quintessence of the goals called for by the new economic and financial mechanism.

The requirements of the macroeconomic equilibrium are satisfied in our country through the intermediary of the unique national plan, drawn up and carried out under the conditions of the consistent application of the principle of democratic centralism. Through the plan, the proportions and correlations are determined between the branches and facets and components of social reproduction, and numerous direct, inverse and propagated relations are identified and taken into consideration. This presupposes the careful analysis of the volume and quality of labor resources and material resources and the careful analysis of the relationship between sectors I and II, between industrial production in groups A and B, between industry and agriculture, between the extraction industry and the industrial processing industry, between investments and the potential to achieve them and so forth.

In the process of drawing up the unique national plan, the methodology was completed and improved systematically in order to satisfy the requirements of the equilibrium, both for the material equilibrium and for the financial, monetary, hard currency and labor force equilibrium. However, the improvement of this methodology remains a constantly current task in order to correspond to the requirements of each stage of the country's social-economic development process.

The fulfillment of the objectives set by the 12th Congress requires the economic units to draw up and carry out certain efficient measures designed to ensure the material equilibrium of the plan and, in connection with this, the carrying out of technical-material supply under the best conditions.

In placing the accent of plan discipline on physical production, new emphasis was given to appropriately providing technical-material supplies. From 754 important physical products pursued in 1975, last year the number of these products rose to 1,385.

It must be said, however, that in the field of technical-material supply there still are shortcomings, principally generated by the non-fulfillment of the physical plan for some products. Thus, in 1979, physical production was not achieved at the planned level for a series of important products. These shortfalls were caused by delays in putting new facilities into operation and in attaining planned parameters, interruptions in production, inappropriate use and maintenance of equipment and installations, and so forth.

The achievement of physical production in the planned structure, quantity and quality as contained in the unique national plan presents a special importance for the balanced and efficient development of the economy at sustained rates and in accordance with social needs. We have in mind the interdependency of the branches and sub-branches of the economy and the fact that any change in the structure of physical production in an economic unit has repercussions in other enterprises having contractual relations. It is sufficient to produce a shortfall in a single material balance to have a chain reaction effect upon many balances with negative results upon the general equilibrium from the point of view of the sizing of the plan, as well as upon the supplier-user economic relationship. This is the source of the requirement to increase efforts on the part of all responsible authorities in order to fully achieve the plan goals according to the structure for varieties and quality, an obligatory condition for ensuring the material equilibrium. At the working conference of the Romanian Communist Party's Central Committee in February of this year, comrade Nicolae Ceausescu strongly insisted upon the need to achieve physical production in an exemplary manner in all sectors, beginning with the producers of raw materials and materials, with special attention given to the mining and petroleum industries.

The diversification of supply sources, the conclusion of medium- and long-term contracts, the improvement of the methodology for material balances, the assumption of more important tasks in the field of recycling secondary resources, the better organization of the storage and depot network and so forth have contributed and will contribute to the consolidation of the plan's material equilibrium. At the same time, contractual discipline is acquiring greater respect. At the end of last year, over 900 economic units had unhonored economic contracts, especially in the machine building industry (43 percent of the total), the chemical industry (18.5 percent) and the food industry (16.6 percent).

The consolidation of the plan's material equilibrium is indissolubly tied to the on time start up of new production facilities. In the plan material balances, we count on the production that should come from new

projects and any delay in the start up of fixed assets creates a chain reaction of shortfalls in the material equilibrium. For that reason, the investment user, the builders, the equipment suppliers and the designers play an essential role in consolidating the plan's material equilibrium.

Despite the good results in investment activities, there still are sufficient cases of the failure to adhere to the timeframes outlined in the plan regarding the start up of certain production facilities. Last year, for example, in the chemical industry 170 facilities did not begin production at the planned time, in the machine building industry approximately 75 facilities and in the metallurgical industry 20 facilities. The shortcomings led to a decrease in production-goods in industry overall by approximately 2.5 percent. For their part, delays in attaining the designed parameters at certain facilities that were operating deprived the national economy of production-goods worth approximately 12 billion lei.

It must be said that under conditions of an increased volume of investments the planned physical production achieved by new facilities holds a growing percentage in ensuring the plan's material equilibrium and in achieving certain rapid rates of development in all the branches of the economy. That is why there is need for a better preparation of the work on new investments, the appropriate use of production facilities belonging to the construction organizations, the reduction to a minimum of the time needed to build new projects, the increase in the percentage of investment expenditures for production fixed assets, the decrease in the gap between the time of making expenditures and the time of start up and so forth.

As a result of the long timeframes in which some investments were achieved in 1979, the percentage of investment expenditures resulting in fixed assets put into operation in the total amount of investment expenditures made fell approximately 22 percent compared to 1975, a fact that was reflected in a significant increase in the funds tied up in projects under construction and those unfinished. The consolidation of the material equilibrium requires a rationalization of the work effort in area of investments and construction. We must avoid the dispersal of the potential to achieve investments to those projects that do not have the appropriate conditions for being put into operation on time. We must concentrate forces towards those decisive projects for development and those that can contribute without delays to increasing national income. Moreover, the optimization of the relationship "investments put into operation - investments not finished" constitutes an acute problem in the current period. At the conference we referred to, comrade

Nicolae Ceausescu very seriously pointed out this aspect of carrying out the plan, emphasizing the need to concentrate forces and take all measures for the priority achievement of the projects scheduled to go into production this year.

The reduction of material consumption, the accentuation of the processes for better use of materials and the recycling of the so-called "secondary resources" are factors for conserving social labor and, implicitly, endogenous elements of the material equilibrium. Actually, under the conditions of the limited nature of the material resources available to our country, the energy crisis and the situation of raw materials on the world market, where prices are sharply increasing, the conservation of all resources and the recovery and reuse of materials appear as requirements of the first order, upon which the provision of the raw material and material base necessary for the normal carrying out of production depend.

In the coming five year plan, a 34 percent increase has been planned for the degree of using raw materials, materials and energy. Through the recovery and reuse of materials, by the end of 1984/1985 we will obtain nearly half of the total resources of steel, non-ferrous metals, plastics, tires, wood materials and textiles. The carrying out of these objectives requires the elaboration of certain exemplary technical-organizational measures, as well as the systematic pursuit of their application so that the material balances will receive, under the heading of "reserves," everything that was planned. At the same time, the conservation of resources and the organization of collecting reusable materials from the public are requirements of the first order.

A special importance is represented by the factors which effect the plan's financial equilibrium. The achievement of profitability and planned profits, the state's net income and our own resources for investments, the acceleration of the money-goods-money flow, the rigorous respect of the budget for incomes and expenditures these—are some of the factors.

In the area of reducing production costs, significant results have been obtained in the first four years of the five year plan. For example, in the national-level industry, costs decreased in the 1976-1979 period compared to 1975 by approximately six percent, of which nearly four percent came from material expenditures. Certainly, the achievements would have been even greater if the provisions recorded in the yearly plans had been fulfilled by all the production units. Thus, last year in some enterprises there were cost and material overruns per 1,000 lei of production-goods, compared to the plan data. There is an urgent need at all organizational levels, from the basic economic unit to the central reporting organs, to carry out a more sustained activity to reduce total and material production costs by staying within planned consumption norms,

recovering and reusing all reusable material resources, introducing new products and technologies, reinforcing the conservation program and eliminating any type of waste and poor management.

The new economic and financial mechanism requires systematic actions so that each leu advanced by society will obtain maximum income. There exist, unfortunately, economic personnel who probably feel that the financial resources of the socialist state are limitless, personnel who know how to request, but have little to offer beyond using society's funds. For instance, our own resources for financing investments (amortization and profits) were achieved at the rate of only 57 percent in 1979 in the metallurgical units, 49.4 percent in the chemical industry and 82.2 percent in the machine building units.

The 12th Party Congress rightly requested that the economic-financial aspects of the economic processes be more carefully studied and pursued in the next five year plan, both at the level of the enterprises and centrals and at the macroeconomic level so that the resources of development can be more appropriately ensured. In this sense, there is great significance in optimizing the processes which lead to ensuring the monetary equilibrium of the unique national plan. Among the measures that require attention and that can contribute to a healthy monetary flow, we can mention respect of the enterprises' obligations regarding the delivery of goods to the market, fulfillment of the goals for providing services, restricting the volume of unfinished investments and increase of product quality.

Combatting the unjustified pressures from producers upon the general price level is, likewise, an aspect of major significance in the monetary equilibrium. "Equal price for an equally useful effect," a strict relationship between the real quality of the product and the level of the price, strengthening discipline for the respect of production costs - these are indispensable principles for maintaining prices within the planned limits. We must not lose sight of the fact that some monetary relations on the world market also exert pressures upon our economy and counteracting them can only occur by reducing domestic costs and conserving social labor.

Having arrived at this point, we will refer to the plan's hard currency equilibrium, which calls for increasing the competitiveness of Romanian products, rationalizing imports, increasing the efficiency of foreign trade operations and accentuating cooperation with other countries in the fields of production, science and technology. The goal set by the party is that through the growth of the efficiency of our foreign trade we will ensure not only a balance of payments this year, but also an attenuation of the deficit created last year. In this sense, efforts

will have to be intensified to increase the quality of the products destined to be exported and to ensure the higher use of these products on the foreign market, as well as to restrict imports. As the secretary general of the party said: "The provisions regarding imports must be regarded as maximums and the provisions for exports as minimums." "The flow of total returns," an indicator with which we are used to working in foreign trade decisions, is no longer satisfactory for us. It is important for us to understand "the net hard currency contribution" and to obtain export prices in proportion to those of the products we import.

The Romanian economy has reached the point currently where it must use the work force more carefully than ever before, investigating the equilibrium in this area with the help of the so-called disaggregated analytical balances. As is known, the lack of labor has been felt even during the current five year plan in some branches and sub-branches (the construction industry, the extraction industry and so forth) and the sustained development of the country outlined for the future inexorably requires the management of work force resources with a maximum of attention. The key to solving the problem is in a high rate of growth in labor productivity, an objective that can be attained under conditions of promoting technical progress, systematic training and qualifying of the work force, and strengthening work discipline on a broad front.

It is not a secret for anyone that in all the economic units there still are great reserves with which to increase labor productivity so that the greatest part of increases in production can be obtained on the basis of this factor. In the next five year plan, the objective of obtaining an 80 percent increase in production on the basis of increasing labor productivity must be considered as a minimum. Attaining and exceeding this requires energetic measures and specific programs which must be considered an integral part of the plans of the enterprises, centrals and ministries.

The problem of the equilibrium and the efficiency of the process of economic growth is extremely vast and complex. We tried in this article to deal with merely some aspects from the point of view of current requirements. Certainly, many other facets of the problem remain to be clarified on a theoretical and practical level in order to contribute, in this manner, to the solid substantiation and successful achievement of the great tasks and objectives of the next five year plan.

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INVESTMENTS IN FIXED ASSETS IN FIRST QUARTER

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 27 May 80 p 2

[Article by R. V.]

[Text] The tendency of a high growth of investment spending, which was evident last year and in the first 2 months of this year, was halted in March. The nominal growth in that month was 17 percent, while real investments in fixed capital were at the level of the same month of 1979 because of the high rise of prices. According to preliminary figures, the slowdown has continued in April as well. By sources, payments in March increased over the same month of last year 11 percent from the funds of organizations of associated labor in the economy, 36 percent from organizations of associated labor in noneconomic activities, 48 percent from self-managed special-interest communities, 17 percent from bank resources and 8 percent from the resources of sociopolitical communities. Consequently, slower payments from the funds of the economy, sociopolitical communities and banks had the greatest influence on the moderate growth of investments in the last 2 months. Measures are slowing down investments.

Investments in the first quarter increased nominally 28 percent over the same period of last year, but in real terms, the growth rate was about 12 percent. A comparison with projections shows that the actual growth rate in the first 3 months was twice as high as planned, since the Resolution on Policy for Implementing in 1980 the Social Plan of Yugoslavia assumed a real growth of economic investments of about 6 percent, while noneconomic investments, except for investments in housing construction, were to be essentially reduced.

Judging by the available resources and the measures which have been taken, we can expect that the trend of investments in coming months will be brought into conformity with the goals set forth in the resolution. Certainly two new federal laws (on required participation and on temporary suspension of noneconomic and nonproductive investment projects), which have already taken effect at the beginning of the year, will tend to slow down this type of spending. Monetary policy, which has set a limit on the growth of credit by quarters in order to harmonize commodity-money relations, will

exert an influence in the same direction. Certainly these measures will have a considerably greater effect on new investment projects and investment activity in the coming period than on investment projects already under way.

Investments in Fixed Capital, in millions of dinars

	<u>III 1980</u>	<u>I-III 1980</u>	<u>III 1980</u> <u>III 1979</u>	<u>I-III 1980</u> <u>I-III 1979</u>
Total investments	27,176	82,277	117	128
Organizations of associated labor in the economy	9,693	28,233	111	125
Organizations of associated labor in noneconomic activities	2,570	8,022	136	157
Self-managed special-interest communities	1,593	3,713	148	166
Bank funds	11,843	37,440	117	122
Lendings through banks	987	3,315	114	148
Sociopolitical communities	489	1,554	108	135
Breakdown:				
Opstinas	232	716	117	148
Republics and provinces	177	600	86	116
Federation	80	238	170	161

The republics and autonomous provinces are providing significant support to this orientation through their measures aimed at slowing down investments. This applies above all to measures which have halted work on certain projects, to adoption of republic laws regulating the obtaining of financial resources for investment projects, and to other measures to bring investments within the limits of available resources and to guide them into those purposes which have priority.

Dominant Share of the Banks

The distribution by sources shows that in the first quarter work paid for from the resources of organizations of associated labor in the economy was 25 percent greater than in the same period of last year, payments from the resources of organizations of associated labor outside the economy increased 57 percent, those of self-managed special-interest communities rose 66 percent, those of banks rose 22 percent, and those of sociopolitical communities rose 35 percent.

The uneven growth from one source to another has tended to change the distribution of participants in total investments, since the share of organizations of associated labor in noneconomic activities increased from 8 percent in the first quarter of 1979 to 9.8 percent in the same period of this year, that of self-managed special-interest communities from 3.5 percent to

4.5 percent, and that of sociopolitical communities from 1.8 percent to 1.9 percent, while there was a decrease in the share of organizations of associated labor in the economy from 34.6 percent to 34.3 percent and that of banks from 48.7 percent to 46.1 percent. However, in spite of a certain reduction, the share of the banks continues to be dominant in total investments in fixed capital, while the share of the economy has been reduced to one-third of those investments.

In the breakdown by republics and provinces the growth of investments in the first quarter was 30 percent in Bosnia-Herzegovina, twofold over the same period of last year in Montenegro, up 24 percent in Croatia, 28 percent in Macedonia, 32 percent in Slovenia and 25 percent in Serbia. In Serbia proper the increase was 32 percent, in Kosovo 38 percent and in Vojvodina 7 percent. The high rate of growth in Montenegro is the result of investments for reconstruction of the areas damaged by the catastrophic earthquake in April of last year.

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AGRICULTURE-FOOD PRODUCTION, NEEDS FORECAST TO 1985

Belgrade GLASNIK POLJOPRIVREDNE PROIZVODNJE, PRERADE I PLASMANA in Serbo-Croatian No 4, Apr 80 pp 22-31

[Excerpt from article entitled: "Basic Directions of Development of the Yugoslav Agroindustrial Complex 1981-1985," pp 14-48]

[Excerpt] 1.2. Projection of Demand and Establishment of Total Needs

The projection of future demand is based on the anticipated food consumption of the population, other forms of consumption within the country and amounts envisaged for export and reserves.

a) When the projection was made of the food consumption of the population it was assumed that personal consumption in the coming period would rise at an annual rate of 5 percent, i.e., at the rate by and large assumed for most projections of development for the coming period. The average annual rate of population growth was taken at 0.8 percent, and the expected changes in the economic composition and level of per capita income were also taken into consideration. According to this projection (Table 1), we expect a reduction in consumption of wheat and grains in general and a rise in the consumption of meat and other high-quality foodstuffs. The per capita daily caloric intake would stay at a level of about 3,500 calories, but the composition would change toward an increased share of calories of animal origin.

It is also anticipated that the necessary amounts of wheat and potatoes will mainly stay at the same level in view of the total population increase, and there would be sizable increases in the necessary amounts of meat (by about 1.4 million tons), milk, eggs, sugar and edible oils (Table 2).

b) Other forms of consumption are also significant to an examination of total demand in the country. We are referring, that is, to consumption as livestock feed, reproductive consumption (seed for planting) and losses or spillage in production of certain of the more important farm products. However, little attention has so far been paid to this in our scientific and professional literature.

Table 1. Projection of Per Capita Consumption of the Most Important Raw and Processed Foods, in kilograms

Type of Product	Elasticity Coefficient	Type of Function*	Consumption in Base Year (1977)	Consumption in 1985	Total Consumption in 1985, in thousands of tons
Wheat and rye flour**	--	--	152.4	140.0	3,250
Corn	-0.450	SL	22.6	17.6	408
Rice	0.091	SL	2.4	2.6	60
Potatoes	0.070	L	67.5	70.1	1,620
Dried beans	-0.160	L	8.3	8.0	185
Other vegetables	0.170	L	95.9	109.6	2,500
Fresh fruit and grapes	0.730	DL	62.8	74.2	1,720
Tropical fruit	0.500	DL	7.5	9.4	210
Beef	1.130	DL	13.7	18.0	410
Pork	0.640	SL	18.2	23.0	530
Mutton and lamb	0.200	L	2.5	2.0	45
Poultry meat	--	--	11.0	13.5	315
Fish	1.610	DL	2.5	4.5	105
Lard	0.190	DL	9.9	8.5	190
Vegetable oils	0.210	SL	10.7	12.2	280
Fresh milk	0.460	DL	98.0	121.2	2,800
Cheese (all kinds)	0.360	L	6.7	8.0	185
Eggs	0.470	SL	9.0	11.0	250
Butter**	--	--	0.8	0.9	20
Sugar	0.200	SL	32.8	37.2	850

* SL--semilogarithmic; L--linear; DL--logarithmic [literally "double-logarithmic"].

** Consumption in 1985 was forecast without using the results of the analysis.

Table 2. Total Needs for the Principal Raw and Processed Foods in 1985, in thousands of tons

Type of Product	To Feed Population	Other Forms of Consumption	Total Consumption	Reserves or Exports*	Total Needs
Wheat and rye	4,589	928	5,517	450	6,000
Corn	430	10,153	10,583	400	11,000
Potatoes	1,500	1,618	3,118	--	3,200
Dried beans	180	37	217	10-20	225
Fresh vegetables	2,450	127	2,577	20	2,600

Table 2 (continued)

Type of Product	To Feed Popula- tion	Other Forms of Consump- tion	Total Consump- tion	Reserves or Ex- ports*	Total Needs
Fresh fruit	2,002	907	2,709	40	2,950
Grapes	350	1,336	1,686	15	1,700
Meat (all types)	1,385	--	1,385	60-70	1,450
Beef	400	--	400	--	460
Pork	520	--	520	--	525
Mutton and lamb	55	--	55	--	70
Poultry meat	325	--	325	--	330
Eggs, in millions	5,150	--	5,150	--	5,200
Milk, millions of liters	5,160	--	5,160	--	5,200
Sugar	830	--	830	60-70	900
Fats	458	--	458	55	520
Edible oil	278	--	278	30	310
Lard	180	--	180	25	205

* The figures given for wheat, dried beans, sugar and fats pertain to the necessary quantities of reserves, while for the other products they pertain to possible quantities for export.

Most important is certainly the volume of consumption as livestock feed. But balancing the livestock feed base is a very complicated task and one that has been dealt with very little in our scientific and professional literature. Working out a realistic livestock feed balance in our country arises then as one of the priority general tasks. At the same time very small changes have so far been made in the composition of the livestock ration. But the growth of meat production has contributed significantly to the very dynamic growth shown in the overall by this type of consumption. In the coming period we should expect changes in the composition of the livestock ration toward higher use of quality coarse feed produced domestically. However, the anticipated growth of meat production in Yugoslavia will certainly tend to bring about a substantial increase in total grain consumption to feed the population, corn in particular.

Among the other forms of consumption, such as seed for planting and spillage or losses, no significant changes should be expected.

On the whole the estimated level of all forms of consumption will show a certain growth over needs up to now, such as, for example: corn consumption will reach 10 million tons, potatoes 1.5 million tons, fresh fruit and grapes about 2 million tons, etc. (Table 2).

c) Necessary reserves of the most important foodstuffs are necessary for quality supply of the public under all conditions and for stable relations

on the market. Total anticipated reserves cannot be built up in the course of 1 year, but would have to be built up over the next 5 years.

d) Projections of sales on the foreign market depend on conditions in the international trade of raw and processed foods, which in recent years has taken place under rather problematical circumstances. There is a notable tendency toward a decline of international trade and an increase of autarkism. One of the principal reasons for this situation is the increased production and drop of demand on markets of the economically advanced countries, where a steady growth of self-sufficiency and diversification of production is felt along with a simultaneous saturation of the consumption of a number of principal raw and processed foods and also a stagnation or slow growth of the population. In actuality domestic production operation resulted from a steady growth of agricultural protectionism, so that numerous restrictions hamper the possible trade and have been deforming the previous flows. At the same time, the markets of the developing countries are economically rather weak to be able to absorb sizable amounts of agricultural surpluses, the level of nutrition of the population in those countries is still low, and the diet itself is very unfavorable.

When we bear all this in mind, then we should not harbor any exceptional expectations with respect to our exports of raw and processed foods. This is also indicated by the results of exports in recent years. That is, of our 11 most important export products, only 4 showed a larger physical volume of exports in 1977 than in 1968 (tobacco, fresh fruit, processed meat products and live horses). The volume of exports of other products has been smaller and has shown a tendency to decline from year to year. In any case, Yugoslavia's share in world agricultural exports is very small. In 1977 that share was only 0.37 percent, which is considerably less than in, say, 1972, when it was 0.61 percent. At the same time, our total imports have amounted to about 0.70 percent of total world agricultural imports. This unquestionably indicates adverse tendencies in our international trade in raw and processed foods. A small increase in agricultural exports would therefore have significant effects, especially in terms of a further growth of production.

When we also take into account the prices of our most abundant export products, we can estimate that in the coming period the prospects on the foreign market will continue to be best for several of our traditional exports, such as: tobacco, meat (beef, baby beef, and mutton and lamb), livestock on the hoof (particularly horses), corn, fresh fruit, sugar, oil, wine and hops.

We can expect that the total volume of exports in the coming period will be as follows: meat between 60,000 and 70,000 tons annually, corn about 500,000 tons and tobacco about 20,000-25,000 tons annually.

In view of the results of all these projections, we can estimate that total needs for the production of the most important farm products in the coming

period will be as follows: wheat 6 million tons, corn 11 million tons, potatoes about 3 million tons, fresh vegetables about 2.6 million tons, fresh fruit about 3 million tons, grapes about 1.7 million tons, meat (all types) about 1.5 million tons, sugar about 900,000 tons, fats about 500,000 tons, and so on (see Table 2).

1.3. Changes Expected in the Factors in Agricultural Production

a) The trend of the farm population in our country over the entire postwar development has shown a tendency toward absolute and relative decline. This tendency is a general characteristic of all countries in the world undergoing industrial development, and we should therefore expect it to continue in the coming period in our country as well.

In the projection of the Institute of Agricultural Economics in Belgrade acceleration of the rate of absolute decrease of the farm population as compared to trends up to now was taken as the basis for projecting the population trend. The capacity of nonfarm activities to absorb the expected inflow of manpower from rural areas was also taken into account. The size of the total Yugoslav population was taken on the basis of the last adjusted projection of the Federal Bureau of Statistics.

According to the institute's projection (Table 3), the 2.4-percent or 2.6-percent rate of decrease of the farm population would bring about significant changes in the economic composition of the population in 1985. That is, the share of the farm population in the total farm population would drop to only 25 percent, and the share of the farm labor force in the total labor force would drop to about 30 percent. We should count on numerous migrants from agriculture and rural areas, since the reduction of the number of persons gainfully employed in agriculture in the 1981-1985 period will be about 400,000. In 1985 there will be about 3 million persons gainfully employed in agriculture, which means that this must be anticipated by the projection of the future development of agriculture. This gives rise to the need for a further development of agricultural production and of the agroindustrial complex as a whole so that the large labor force which will remain in agriculture can be better employed.

Table 3. Projection of the Trend of the Total Farm Population and the Farm Labor Force up to the Year 2000, in thousands

	<u>Results of Censuses</u>			1975	<u>Projections</u>		
	<u>1953</u>	<u>1961</u>	<u>1971</u>	(<u>esti- mate</u>)	<u>1980</u>	<u>1985</u>	<u>2000</u>
Total Farm Population							
Total	10,315.8	9,197.6	7,844.0	7,300.0	6,578.0	5,847.0	3,728.0
Rate of de- crease	--	-1.4	-1.6	-1.8	-2.1	-2.4	-3.0

Table 3 (continued)

	Results of Censuses			1975 (esti- mate)	Projections		
	1953	1961	1971		1980	1985	2000
Share in total population, %	60.9	49.6	38.2	34.2	29.5	25.2	14.5
Farm Labor Force							
Total	5,360.0	4,691.7	4,207.6	3,845.0	3,399.0	2,981.0	1,835.0
Rate of decrease	--	-1.6	-1.1	-2.2	-2.4	-2.6	-3.2
Share in total labor force, %	68.3	56.5	47.3	41.9	35.7	30.2	17.1
Labor force participation rate*	52.0	51.0	53.6	52.7	51.8	51.0	49.2

* The labor force participation rate is the percentage of the labor force in the total farm population.

Note: According to a projection (forecast) of the Federal Bureau of Statistics, the total Yugoslav population in 1980 would be 22,299,000, while in 1985 it would be 23,236,000 and in the year 2000--25,653,000.

b) The changes which have taken place in the volume and pattern of farmland use are characterized by the fact that a sizable portion of farmland is not being cultivated or is outside organized production, and the amount of farmland that is socially owned has been increasing more or less steadily.

According to the official statistics, the total area of uncultivated plowland is more than 600,000 hectares, while about 2 million hectares of socially owned pastures are outside organized production. This means that nearly one-fifth of the total available land area is not being used. However, when we discuss uncultivated plowland we should bear in mind that a sizable portion is located in the hilly and mountain region, that it is exposed to erosion and torrents, and that it is not suitable for cultivation except for the planting of forests. Another thing when we discuss socially owned pastures, it is certain that in large part they represent village common land and the like, as well as areas largely degraded so that they can barely be used.

One of the priority tasks in the coming period is to straighten out the land register, since all the official statistics in this field are based on the cadastre land survey dating back 15 years or more. The new land register would certainly offer a more reliable basis for projecting future trends and changes in the size and use pattern of farmland in general.

According to the official statistics, between 1961 and 1977 total farmland diminished on the average about 40,000 hectares annually, mostly for the sake of infrastructural facilities, industrial projects, expansion of urban settlements and afforestation. There are no accurate records on all the purposes for which farmland was reduced. The tendencies toward a reduction of farmland will continue in the coming period as well, both because of the necessity to afforest a certain portion of farmland, that is, return it to its original purpose, and also because of construction of the highway network and other infrastructural facilities and the like. According to the projection (Table 4), the size of the reduction will mainly continue, but at a faster rate than up to now.

Table 4. Past and Anticipated Changes in the Amount of Farmland and Its Use Pattern--Total and by Sectors

	In Thousands of Hectares			Annual Average (+ or -), in thousands of hectares		Expected Changes, in thousands of hectares	
	1961	1971	1977	1961-71	1971-77	1980	1985
Total (both sectors)							
Plowland	7,688	7,465	7,229	-22.2	-39.3	7,100	6,900
Orchards	419	458	473	+ 2.7	+ 2.7	482	500
Vineyards	273	252	246	- 2.1	- 1.0	248	250
Meadows	1,945	1,951	2,002	+ 0.6	- 8.5	2,000	1,950
Arable land	10,325	10,125	9,950	-20.0	-29.2	9,830	9,600
Pastures	4,692	4,470	4,460	-22.2	-10.7	4,370	4,200
Total	15,017	14,595	14,356	-42.2	-39.9	14,200	13,800
Socialized Sector							
Plowland	935	1,234	1,286	+29.9	+ 8.7	1,320	1,450
Orchards	35	43	40	+ 0.8	- 0.5	43	50
Vineyards	27	28	34	+ 0.1	+ 1.0	37	45
Meadows	158	179	199	+ 2.1	+ 3.3	200	205
Arable land	1,155	1,484	1,560	+32.9	+12.5	1,600	1,750
Pastures	2,750	2,870	2,850	+12.0	- 3.3	2,850	2,800
Total	3,950	4,354	4,410	+44.9	+ 9.2	4,450	4,550
Private Sector							
Plowland	6,753	6,231	5,943	-52.2	-48.0	5,780	5,450
Orchards	384	414	433	+ 3.0	+ 3.2	439	450
Vineyards	246	224	212	- 2.2	- 2.0	211	205
Meadows	1,787	1,772	1,803	- 1.5	+ 5.3	1,800	1,745
Arable land	9,170	8,641	8,390	-12.9	-41.5	8,230	7,850
Pastures	1,942	1,600	1,555	-34.2	- 7.3	1,500	1,400
Total	11,112	10,241	9,946	-87.1	-48.8	9,750	9,250

Expansion of the area of land which is socially owned was rather dynamic up to 1970 and averaged about 45,000 hectares annually. After that it slowed down considerably, not amounting to even 10,000 hectares annually. This occurred primarily because after the economic reform the conditions for obtaining credit to purchase private land were stricter, and socialized agricultural organizations did not have sufficient funds of their own with which to buy land.

With respect to future expansion of the area that is socially owned, on the basis of past experience we can expect that in the period 1981-1985 socially owned cultivable land will increase about 150,000 hectares, which is neither a lot nor a little. We should emphasize that this expansion is expected in a situation when there will be an absolute reduction of farmland for the reasons mentioned above. Farmland will be involved in transactions because many private farms are disappearing. However, the total volume of expansion of socially owned land will depend both on the material capabilities of work organizations and on credit policy, that is, on opportunities which are to be created by the republics and autonomous provinces in their policy toward the agroindustrial complex, as well as on the amount put up for sale by private landowners.

The expected expansion of socially owned land will unquestionably have an impact on changes in the pattern of ownership. Accordingly, in 1985 about one-third of all farmland would be socially owned, and the share of plowland that is socially owned would increase from the present 17.7 percent to about 21 percent of total plowland (Table 4).

In the coming planning period an effort must finally be made in our country to resolve many issues related to land use planning, especially because very little has been done so far. That is, land use planning or farmland use planning is a question that has priority for the future development of the agroindustrial complex in our country.

c) The changes so far in the size and pattern of use of the livestock population, that is, of the trend in the total number of all types of livestock in our country, have shown differing tendencies. There have been substantial changes in the total number of cattle and hogs, though the trend has been rather markedly unstable, but there has been a tendency toward a larger number. On the other side from this there has been a steady tendency toward an absolute reduction in the total number of sheep and horses. The increase in the number of head of poultry has been steady and dynamic, and that applies particularly to the socialized sector.

The future development of livestock raising in our country depends on improvement of the breed pattern of all types of livestock. Improvement of the breed pattern will contribute to increasing production per head and thereby to total production of meat and milk, which has in the past also been one of the priority tasks in development of our agriculture.

An increase in the total number of cattle and hogs is anticipated, but at a lower rate than in the previous period (Table 5). A relatively high rate of growth is expected for dairy cows and sows in the socialized sector, but in absolute terms this increase is not large, since the initial base is very low.

Table 5. Projection of the Size of the Livestock Population--Total and by Types, in thousands of head

<u>Type of Livestock</u>	<u>Present Situation</u>	<u>Projection</u>		<u>Growth Rate</u>	
		<u>1980</u>	<u>1985</u>	<u>1976-1980</u>	<u>1981-1985</u>
Total (both sectors)					
Cattle	5,643	5,750	6,000	1.7	1.4
Cows	3,142	3,250	3,400	4.2	1.5
Hogs	7,290	8,000	9,000	8.4	4.0
Sows	1,285	1,350	1,500	9.0	3.6
Sheep	7,514	7,500	7,400	-0.7	-0.3
Breeding ewes	5,513	5,500	5,400	-0.5	-0.2
Poultry	60,399	70,000	80,000	4.2	2.7
Horses	759	700	500	-4.7	-6.5
Socialized Sector					
Cattle	413	450	500	2.7	3.5
Cows	93	110	150	-7.6	10.9
Hogs	1,197	1,500	2,000	10.2	10.1
Sows	94	100	150	7.8	14.5
Sheep	245	250	265	2.5	1.2
Breeding ewes	171	175	18	0.4	0.6
Poultry	11,813	2,400	30,000	9.4	4.6
Private Sector					
Cattle	5,230	5,300	5,500	1.6	1.3
Cows	3,049	3,140	3,250	4.7	1.2
Hogs	6,093	6,500	7,000	8.2	2.5
Sows	1,191	1,250	1,250	9.2	2.6
Sheep	7,269	7,250	7,135	-0.8	-0.3
Breeding ewes	5,513	5,500	5,400	-0.5	-0.2
Poultry	42,286	46,000	50,000	4.2	2.7

In the breakdown by sectors the private sector will still remain dominant in cattle raising because of its interests in this branch of animal husbandry and also because live manpower still has a considerable share in the work process in cattle raising. On the other hand the possibility for development of industrial-type production in hog raising is orienting the socialized sector more and more toward this branch of animal husbandry.

A slightly slower rate of decline in the number of sheep is anticipated, which means that the tendency toward a decline of sheep raising in our country will continue. The reasons are both the reduction of manpower in the private sector and also the fact that private producers have less and less incentive to engage in this branch of animal husbandry.

The development of poultry raising will continue to be dynamic in both sectors, but not to the same degree as in the previous period.

d) Of the other factors tending to increase agricultural production specific mention should be made of the increase in mechanical traction, that is, the mechanization of agriculture, as well as the increased use of manufactured fertilizers. As for mechanization, the sizable increase in the total number of tractors on private farms has been very rapid over the last several years. That is, the number of tractors on private farms was only 70,000 in 1980, while in 1978 it was more than 300,000. With an average of about 24 hectares of plowland per tractor, our country has in recent years come closer to the advanced West European countries, and this situation is considerably more favorable than in the socialist countries. We should not therefore expect any considerable increase in the number of tractors, especially on private farms. Tractor purchases would be in the vicinity of the number of tractors which would have to be replaced with new ones.

In the socialized sector a tractor is replaced after 5 years, while on private farms its service life is much longer and averages about 15 years. Since private farms do not have the necessary machine attachments, in the coming period we should expect a larger amount of purchases of various machine attachments.

Our country is still lagging behind the advanced countries of Europe with its manufactured fertilizer consumption at about 80 kg of active ingredients per hectare of cropland. Consumption in the socialized sector is 3-4-fold higher than in the private sector, which indicates that in the coming period we should expect an increase in the consumption of manufactured fertilizers. It is expected that in 1985 average consumption in terms of active ingredients would be about 125 kg of active ingredients per hectare of cropland, or a total of 1.25 million tons of active ingredients, which is 50 percent more than at present.

On the whole the changes expected in the use of mechanization and consumption of manufactured fertilizers will certainly tend to increase production per unit capacity. When we take into account further advances of our scientific institutions in finding new high-yield varieties of the most important agricultural crops, which are expected, we can certainly expect higher yields.

Up to now sizable investments have been made in water-management projects. In some places even the most modern systems and technologies are used (for example, in Macedonia). But on the whole not much has been done to build

irrigation and drainage systems. What is more, even some of the hydrosystems built previously have proved unfunctional or are underutilized. There are several reasons, but certainly one of the most important is that we still have not definitively worked out the water balance. This is to say at the same time that in the coming 5-year period we should resolve the two major strategic issues of future development not only of the agroindustrial complex, but indeed of our economy as a whole, and they are the following: the normative legal questions and development issues of land use planning and the issue of water-resource management and use.

1.4. Projection of the Growth of Agricultural Production*

a) The projection of the growth of the physical volume of production anticipates that the needs set forth for the coming period will be met for grain, industrial crops, vegetables, fruit, meat and livestock products, as well as for fodder crops and livestock feed as a whole. According to the projection, which has been given in tabular form (Table 6), wheat production in 1985 would have to reach a level of 6 million tons, and that of corn about 11 million tons. The socialized sector will show a more dynamic growth of these crops since there will be an increase not only in average yields, but also in total area planted to these crops. A mild growth of production is anticipated for the other grains.

In order to meet all needs in 1985, especially the increase in meat production, total production of all grains would have to range about 19 million tons.

The largest increase expected for industrial crops is for oilseed and then sugar beets. To achieve a production of sugar amounting to about 960,000 tons and vegetable oil about 370,000 tons, the production of sugar beets in 1985 will have to be 7.65 million tons, and that of all oilseed more than 850,000 tons, of which sunflower seed alone will represent 700,000 tons.

With respect to tobacco, only a moderate growth of production has been anticipated, which corresponds to the present situation both on the foreign and domestic markets.

Table 6. Projection of the Growth of the Most Important Products of Crop-
ping, Fruitgrowing and Viticulture, in thousands of tons

Type of Product	Average Output 1974/75	1980 Esti- mate	1985	Growth Rates 1981-85	Share of Social- ized Sector, %	
					1974/75	1985
Wheat	5,343	5,800	6,000	0.7	38.9	40.8
Corn	8,711	9,500	11,000	3.0	16.7	27.5
Barley	749	775	800	0.6	35.9	37.5
Oats	361	385	400	0.7	10.0	15.0

Table 6 (continued)

Type of Product	Average Output	1980 Esti- mate	1985	Growth Rates	Share of Social- ized Sector, %	
	1974/75			1981-85	1974/75	1985
Sugar beets	4,256	2,500	7,650	3.9	66.4	63.2
Sunflower seed	286	600	700	4.6	50.0	58.8
Soybeans	12	75	85	2.5	75.0	79.0
Rapeseed	13	45	55	4.1	92.3	83.3
Tobacco	65	70	75	1.5	3.1	8.0
Potatoes	2,761	3,000	3,100	1.3	1.3	3.2
Dried beans	172	200	225	2.4	0.6	2.2
Fresh vegetables*	1,690	2,200	2,600	3.4	6.5	3.4
Alfalfa	2,197	2,350	2,700	2.8	13.5	18.5
Clover	1,272	1,400	1,500	1.4	10.0	16.7
Silage corn	1,014	1,250	1,600	5.1	51.2	56.2
Apples	370	500	600	3.7	46.2	50.0
Plums	816	900	950	1.1	3.4	5.3
Other fruit**	368	500	650	5.4	21.2	28.5
Berries	47	55	70	5.4	4.7	14.3
Grapes	1,055	1,350	1,700	4.7	20.4	26.5

* Tomatoes, peppers, garlic and onions, carrots, cabbage and kale.

** Sweet cherries, sour cherries, peaches, apricots, pears and quinces.

An increase in total production is also expected in market gardening. The smallest increase is in the production of potatoes, since satisfaction of domestic needs for potatoes has already been reached, and the prospects for export are limited, to say the least. The projected potato production of about 3.1 million tons annually can be achieved even without increasing the area planted to that crop. A moderate growth is also envisaged in the production of fresh vegetables, mainly at the growth rate up to now, since mainly these are labor-intensive crops, and production takes place mostly in the private sector, where otherwise a reduction of available manpower is expected.

A substantial increase in the production of fodder crops, especially silage corn, is anticipated. A growth in the production of fodder crops is necessary if we wish to achieve an output of meat and livestock products that can satisfy not only the country's total needs, but also provide the necessary amounts for export.

In the coming period we should expect continuation of a rather dynamic growth in the production of fruit and grapes, especially certain types of fruit, because of increased area of large-scale orchards in the socialized

sector and also because capital investments based on the loan from the International Bank are being channeled into the establishment of vineyards in the private sector.

In animal husbandry production has been showing a faster growth than in cropping even in the past. Based on satisfaction of total ascertained needs for meat and other products, the dynamic growth of production of almost all livestock products is expected to continue, that of meat, milk and eggs above all (Table 7). It is anticipated that the dynamic growth of production of beef and poultry meat will be maintained, though at a somewhat more moderate rate than in the previous period. As for the production of pork, it is anticipated that the negative trend in this branch of animal husbandry that has been recently evident will not only be halted, but there will be a sizable growth of production--at a rate of about 4 percent. Much the same is being anticipated in the production of mutton and lamb, so that the growth of production should increase at a rate of about 3 percent.

Table 7. Projection of the Growth of the Production of Meat and Livestock Products, in thousands of tons

Type of Product	Average Produc- tion	1980 Esti- mate	1985	Growth Rates	Share of Social- ized Sector, %	
	1974/75			1981-85	1974/75	1985
Beef	320	375	450	3.7	21.7	22.2
Pork	392	450	525	3.1	21.8	28.6
Mutton and lamb	53	60	70	3.0	3.9	7.1
Poultry meat	185	240	300	4.6	32.5	41.7
Meat total	1,025	1,210	1,445	3.6	21.3	28.0
Lard	205	205	205	0.0	21.9	21.9
Cows' milk (mil- lions of liters)	3,453	4,200	5,200	4.4	9.4	11.5
Sheep's milk (mil- lions of liters)	147	150	160	1.3	3.0	3.2
Eggs (millions)	3,632	4,200	5,200	4.4	28.0	38.4
Wool	10.5	11	14	4.9	3.8	7.2

On the whole it is anticipated that total meat production in 1985 will rise to 1.45 million tons, which would meet the projected growth of meat consumption to feed the population and would also create certain amounts for export in the amount of about 60,000-70,000 tons per year. With respect to meat exports there is a need to find opportunities to export meat to countries where the standard of living has been rising in recent years.

With respect to the other products of animal husbandry, such as milk, eggs and wool, the projection anticipates a growth of production within the limits of satisfaction of needs within the country. Therefore these growth rates, though somewhat higher than the projected growth rates for plant production, are still more moderate than they were in the previous period.

In the coming period there will be an increased share of the socialized sector in production of most principal farm products, especially industrial crops (sugar beets and oilseed), poultry meat and pork, wheat and eggs. Private farms will in the coming period be more significant in the production of grain and livestock, as well as vegetables and fruit, which is in conformity with their production capacities and the manpower they will have in the coming period up to 1985.

b) Important results have been achieved in increasing yields and the weight gain per unit capacity in development so far. The greatest impact on higher yields in cropping has been exerted by introduction of new high-yield varieties of certain crops, but also the considerably better soil and crop practices and also increased use of machinery and manufactured fertilizers.

In the coming period we should also expect further advances in selection work, that is, in the finding of new high-yield varieties, as well as in further improvement of soil and crop practices. All this must necessarily have an impact in terms of a further increase in yields and weight gains. There is a considerably greater potential for this in the private sector. That is why we anticipate an increase in the yields of the most important crops (Table 8). In wheat production it is expected that the yield will rise to 55 quintals per hectare in the socialized sector and 35 quintals per hectare in the private sector. This means that a total wheat harvest of 6 million tons can be achieved on an area of about 1.6 million hectares, that is, on approximately the same area as today. In corn production it is expected that the yield will increase to 70 quintals per hectare in the socialized sector and 45 quintals per hectare in the private sector, while the average yield would be about 48 quintals per hectare, which is still lower than achieved in the United States, which is the world's largest corn producer. Through the introduction of new domestic high-yield varieties, high yields of industrial crops have been achieved in recent years, and this especially applies to sunflowers. In the production of soybeans and other oilseed, and also tobacco, it is expected that maximum yields to date will be achieved in 1985 and will be stable for a lengthy period at that level. Similar results are anticipated in the production of the most important vegetable and fodder crops, that is, it is expected that the maximum yields so far achieved in the recent years of the past decade will be achieved in the coming period.

In the weight gain of livestock, that is, in meat production, a sizable increase has been achieved, though not as large as the available resources allow. We should especially stress the fact that in our country there is a rather pronounced phenomenon of slaughtering livestock with relatively low weight, livestock which contains a very sizable potential. Moreover, in the coming period the breeds of livestock and their productive characteristics will also be improved. That is why the projections (Table 9) foresee a sizable growth in animal husbandry: in cattle raising 260 kg of live weight per cow, in hog raising about 800 kg per sow, and in sheep raising 25 kg per breeding ewe.

Table 8. Past and Anticipated Yields of Certain Major Crops, in quintals per hectare

<u>Crop</u>	<u>Average</u>			<u>Maximum</u>	<u>1985 Pro-</u>
	<u>1968/69</u>	<u>1972/73</u>	<u>1976/77</u>	<u>1968-77</u>	<u>jection</u>
Socialized Sector					
Wheat	34.8	39.6	49.9	51.2	55.0
Corn	55.7	54.4	58.6	63.8	70.0
Sugar beets	431.5	440.0	462.0	470.0	500.0
Sunflower seed	20.3	18.5	21.7	23.8	28.0
Potatoes	177.5	177.0	171.0	197.0	200.0
Clover	460.0	50.5	50.5	57.0	60.0
Alfalfa	69.5	68.0	71.0	73.0	75.0
Silage corn	310.5	306.5	338.0	344.0	350.0
Vineyards	68.0	71.4	73.7	81.1	100.0
Private Sector					
Wheat	19.1	22.3	28.8	29.3	35.0
Corn	27.5	31.6	38.2	40.0	45.0
Sugar beets	316.5	330.2	383.5	388.0	420.0
Sunflower seed	15.5	17.0	19.5	22.1	26.0
Potatoes	89.0	83.0	92.5	96.0	120.0
Clover	40.0	39.0	41.0	44.0	45.0
Alfalfa	53.0	52.0	58.0	60.0	--
Silage corn	160.5	181.5	215.5	224.0	250.0
Vineyards	52.4	50.9	45.4	56.7	60.0

It is certain that the largest potential exists for increasing milk production per dairy cow, since average milk production per cow in the private sector has not been higher over the last decade than 1,350 liters of milk per year per dairy cow. In the coming period a sizable increase in milk production per dairy cow is envisaged: to 4,500 liters in the socialized sector and 1,800 liters in the private sector, so that average milk production per dairy cow in 1985 would reach a level of 2,000 liters. This is a sizable increase over the present level, though it is still below the level attained in a majority of the advanced Western countries. However, we cannot anticipate a larger increase over the relatively short period of time up to the year 1985.

c) Projection of the growth of the various branches of production and changes in the makeup of agricultural production. The projected increase in the volume of production of the most important farm products was the starting point for establishing the total growth of agricultural production in the 1981-1985 period and also by sectors and by branches. According to that projection (Table 10), the growth of total agricultural production in Yugoslavia ought to take place at a rate of 3.3 percent. The growth rate

would be considerably higher in the socialized sector and would amount to 5.6 percent, while the growth rate in the private sector would be 2.5 percent, which is slightly lower than in the 1971-1977 period. The projection for the branches of production anticipates a somewhat more dynamic growth in livestock raising than in plant production. In any case, in most of the production groups and branches the growth rates projected for the coming period mainly range close to the growth rates achieved in the past.

Table 9. Projection of the Growth of Yields and Weight Gain Per Unit of Measurement

a) Past and Expected Weight Gain of Livestock (live weight) and Increase of Meat Production--kilograms per head

	<u>1968/69</u>	<u>Average</u> <u>1972/73</u>	<u>1976/77</u>	<u>Maximum</u> <u>1968-77</u>	<u>1985</u>
Weight gain of livestock					
Cattle	164.1	187.6	202.5	207.3	260.0
Hogs	677.7	608.6	695.4	710.5	800.0
Sheep	15.7	17.7	21.4	21.9	25.0
Meat production, thousands of tons					
Beef	93.3	83.6	102.8	104.6	135.6
Pork	323.5	263.8	308.8	347.5	400.0
Mutton and lamb	7.6	8.7	10.5	10.8	12.5

b) Past and Expected Production of Milk, Wool and Eggs Per Unit Capacity

	<u>1968/69</u>	<u>Average</u> <u>1972/73</u>	<u>1976/77</u>	<u>Maximum</u> <u>1968-77</u>	<u>1985</u>
Socialized Sector					
Milk, liters per cow	3,548	3,968	4,246	4,277	4,500
Milk, liters per ewe	29	34	31	38	60
Wool, kilograms per adult sheep	1.98	2.00	1.92	2.02	2.80
Eggs, number per laying hen	206	202	214	221	225
Private Sector					
Milk, liters per cow	1,080	1,103	1,315	1,347	1,800
Milk, liters per ewe	28	33	35	35	40
Wool, kilograms per adult sheep	1.39	1.24	1.35	1.43	1.80
Eggs, number per laying hen	81	90	98	99	120

Table 10. Projection of the Growth of Agriculture Over the Period 1981-1985--Total by Sectors and Branches

Products and Branches	Total	Socialized Variant		Private Variant		Share of Socialized Sector in Total Production, %		
		I	II	I	II	1975	1980	1985
Grain	1.9	4.9	6.7	0.7	1.6	25.4	27.5	30.7
Industrial crops	3.3	4.2	5.6	2.5	3.8	41.3	48.7	50.8
Vegetables	2.4	9.4	14.7	1.9	2.6	3.5	5.2	7.3
Fodder crops	1.3	7.0	7.0	0.4	0.7	11.0	12.1	15.9
Cropping	2.2	5.1	6.8	1.2	1.9	20.8	23.8	27.4
Meadow cultivation	1.8	4.6	4.6	0.8	0.8	23.4	25.0	28.6
Fruitgrowing	3.7	7.0	7.0	2.6	3.5	19.3	23.6	27.5
Viticulture	4.7	8.4	8.4	3.5	3.5	20.7	25.2	30.8
Plant production	2.5	5.5	6.9	1.5	2.1	19.7	24.0	27.7
Cattle raising	4.0	6.7	6.7	3.5	3.5	13.9	15.1	17.1
Hog raising	3.1	6.4	9.7	2.0	2.0	21.7	24.5	28.6
Sheep raising	2.9	9.7	9.7	2.6	3.7	2.8	3.6	4.9
Poultry raising	4.5	7.0	9.5	2.9	4.8	30.3	35.6	40.2
Livestock raising (total)	3.8	6.7	8.7	2.9	3.3	18.6	21.2	24.4
Agriculture	3.3	5.6	7.1	2.5	3.0	19.3	23.9	26.7

Note: The growth rates were calculated by branches and sectors of production on the basis of the methodology used by the Federal Bureau of Statistics in computing the index number of the physical volume of agricultural production, though, of course, the results of the projection of the supply of various agricultural products were used. Products used as processing materials in agriculture (the portion of corn and barley used as livestock feed, fodder crops, oats and hay from meadows) were omitted in computing the growth rate of total agricultural production.

As for the pattern of production, which is also based on the projected volume of production, as well as on the growth rates of the various branches, large changes ought not to be expected in the coming period. The reason is that the projections of the total volume of production anticipate only the necessary increase in the production of grain and meat, as well as of fodder crops or livestock feed, the purpose being to achieve a level of production which will make it possible to satisfy the total greater demand in the coming period. Nevertheless, the share of animal husbandry in the pattern of total agricultural production will increase somewhat, in the private sector its share would be about 56 percent, and in the socialized sector the share of animal husbandry would still be below 50 percent. This is understandable in view of the production orientation of the two sectors. Moreover, the expected rate of growth and expected changes in the pattern of production will result in a sizable increase in the share of the socialized sector in almost all branches of agricultural production. The share

of the socialized sector will increase especially in cropping and poultry raising, as well as in hog raising. This actually means that the share of socialized organization will be greater in those branches of production in which it is possible to make greater use of mechanization and the industrial-type organization of production. Those branches of agricultural production in which the share of live labor is still high in view of the level of engineering and technology attained will retain their leading place on private farms. Viewed as a whole, the projected growth of agricultural production over the period 1981-1985 is in conformity with its principal tasks. That is, the forecast growth makes it possible, first of all, to produce the necessary amounts of the most important products to meet total demand and to set aside certain reserves, as well as certain amounts for export. At the same time, this growth would also provide for adequate employment and thereby income for a sizable portion of the labor force which will stay in agriculture in the coming period.

2. Projection of the Development of the Food Industry

a) The pattern of production and use of existing capacities. Changes in the production structure have been one of the most significant characteristics in the development of the food processing industry in our country up to now. That is, in the mid-fifties the structure of production was rather simple. Only two groupings--the milling industry and the sugar industry--were the leading industries in that period and had a share of about 50 percent in the total marketed volume of production of the food industry. In the mid-sixties the production structure was changing toward an increased share of finished products such as the products of the meat and dairy industry, the canning industry and the confectionery industry. In recent years the share of processed and canned meat products has grown more and more, so that now the leading sectors of the food industry are not only the meat industry, but also factories for production of beverages, bread and alimentary paste, while the milling industry, once the leading industry, now has a share of less than 10 percent.

The food processing industry is using its processing capacities at a slightly lower level than industrial production viewed as a whole. That is, in 1975 the utilization of capacity in the principal activities of the food processing industry was 65-67 percent, which is 10 percentage points below the average for industry as a whole, where utilization was 77 percent. Over the last 2 years utilization of capacity in the food processing industry has risen, but it is still less than the average for the industrial sector as a whole. We can speak only provisionally about utilization of capacity in the food processing industry either because the size of capacity in certain sectors cannot be indicated with sufficient precision (the meatpacking industry) or because of the markedly seasonal nature of production in certain groupings (the fruit and vegetable processing industry) and of consumption (brewing industry). Nevertheless, in order to illustrate how this looks in the various branches or groupings of the food processing industry, we can state the following on the basis of official statistical data:

- i. utilization of capacity has been below 60 percent in the processing of fruit and grapes as well as in the production of vegetable fats;
- ii. utilization of capacity is between 60 and 70 percent in the production of milk, starch, candy and sweets;
- iii. utilization of capacity has been between 70 and 75 percent in the production of beer, canned meats, livestock feed, bread, confections and flour, chocolate products and sausages;
- iv. capacity has been utilized above 75 percent in the production of vegetable oils, flour, alimentary pastes and sugar.

As we see, the figures given on utilization of available capacity show that there is a considerable unused potential today in certain branches of the food processing industry and that that potential is still being underutilized. This is especially important from the standpoint of the future development of certain groupings of the food processing industry and must serve as the basis for decisions on the need to build new capacities in the coming period, i.e., on the directions in which investments are to be channeled.

b) Potential market surpluses and estimate of available raw materials for the food processing industry. The projected production of the most important farm products in the coming period served at the same time as the basis for computing potential market surpluses of certain of the most important products, that is, of the possible volume of raw materials for the food processing industry. The market surpluses of wheat and rye now amount to more than 50 percent, while it is expected that in 1985 they would amount to more than 60 percent of the harvest. This means that the market surplus of this product, which in 1977 and 1978 was about 3 million tons, would be nearly 4 million tons in 1985. In the case of corn we expect considerably smaller market surpluses, but in the year 1985 market surpluses will still reach about 3.5 million tons, which is almost 1 million tons more than today.

Computations were made of potential market surpluses of vegetable crops only for potatoes and fresh vegetables as a whole. Today more than 30 percent of the potatoes are grown for the market, and this ratio is about 50 percent for fresh vegetables. Today the total volume of market surpluses of potatoes amounts to about 800,000 tons annually, and that of fresh vegetables about 1 million tons. In view of the projected growth of production, in the coming period it is realistic to expect an increase in market surpluses of both potatoes and vegetables. In the year 1985 they will amount to over 1.1 million tons of potatoes and almost 2 million tons per year of fresh vegetables. This undoubtedly will facilitate better and more regular supply of large market centers and also will guarantee the raw materials necessary for the food processing industry.

Market surpluses of fruit and grapes have in the past been very uneven in volume because of fluctuations in production. In the coming period, because of the projected dynamic growth of total production, we should expect a considerable growth of market surpluses of fruit and grapes, even as much as twice as great in 1985 as the average for 1974.

Considerably more of the milk and eggs produced goes to the market than is the case of other farm products and amounts to more than 60 percent. In the coming period, in view of the trends shown in the past, we should expect a further growth of market surpluses, and it is estimated that in the year 1985 about 4 billion liters of milk and 4.5 billion eggs will go to market. This would increase the ratio of marketed output to total output to 77 percent for milk and 83 percent for eggs.

The total slaughtering of livestock in our country, given in terms of live weight, has exceeded 1.5 million tons in recent years. About 1 million tons of this is slaughtering done in packinghouses, while more than 500,000 tons of various livestock are slaughtered on private farms. There are essential differences here from one type of livestock to another. That is, nearly 90 percent of the cattle are slaughtered in packinghouses, which is not the case with hogs, sheep and goats, a higher percentage of which are slaughtered on farms.

In the coming period we expect an increase in the volume of slaughtering of all types of livestock in packinghouses, since a trend to that effect has been manifested throughout the entire past decade. On the whole it is estimated that the total volume of slaughtering in packinghouses in 1985 will exceed 1.5 million tons, which is almost 50 percent more than today. This also means that raw materials for the meatpacking industry will in the coming period be increased by about 50 percent over the present level.

As for raw materials for the sugar industry and oil industry, we should emphasize that the volume of the projected production of sugar beets and oilseed is based exclusively on the amount needed for production of sugar and oil in the coming period.

c) Principal features and projected growth of the food processing industry. The food processing industry as a whole has an important place in our country's economy. First of all, the raw material potential and processing capacities are sizable, but so is demand within the country, since the population is turning more and more to consumption of finished products and is consuming less and less food in the raw state or as products of domestic processing. This tendency, in view of the anticipated growth in personal income, will certainly continue in the coming period.

Taking into account the existing capacities and available raw material potential, as well as the requirement of meeting the growing demand in the country, the future development of the food processing industry should be based on the following:

i. first, on the sizable potential of the raw materials base, which should contribute to faster development of those activities whose location, in their entirety or predominantly, is determined by the volume and quality of raw materials;

ii. second, on the sizable growth of final demand, that is, the increase in consumption of finished products in the diet of the population;

iii. third, on the complete or predominant processing of agricultural materials, above all meat, milk, fruit and vegetables, wheat and grapes;

iv. fourth, on the orientation toward the highest possible phase of processing in all its activities;

v. fifth, on integrative linkages on the foundations of self-management with all other phases in food production, which will have a considerable impact both on the growth of production and also specialization and expansion of the assortment of products to meet the needs of society.

A projection of future growth both of the food processing industry as a whole and of its principal activities by production operations and groupings has been drawn up on that basis (Table 11). According to this projection, in the coming period the growth rate of the food processing industry should be 7.5 percent, which is 1 percentage point lower than up to now. As for the principal activities, production of processed foods should increase at a rate of 8 percent (compared to the present 9 percent), and the production of livestock feed should increase at a rate of 9.5 percent (as compared to the 12 percent up to now).

Table 11. Production of Major Products of the Food Processing Industry in the Past and the Projection for 1985

Products	Unit of Measurement	Production in Past			Growth Rate 1968-78	1985 (absolute)	Growth Rate 1981-85
		1968	1973	1978			
Flour	Thousands of tons	2,072	2,260	2,427	1.6	2,650	1.6
Alimentary pastes	"	4	54	63	3.2	70	3.1
Bread and baked goods	"	480	750	973	3.2	1,500	4.6
Fresh meat (all types)	"	384	438	727	7.3	1,150	7.0
Sausage products	"	51	99	156	11.8	250	7.4

Table 11 (continued)

Products	Unit of Measurement	Production in Past			Growth Rate 1968-78	1985 (absolute)	Growth Rate 1981-85
		1968	1973	1978			
Canned meat products	Thousands of tons	50	69	94	6.5	140	6.5
Dried meat and bacon	"	26	33	57	9.1	100	7.4
Sugar	"	398	442	693	5.7	965	5.2
Edible oil	"	120	168	196	5.0	370	6.9
Margarine	"	23	42	48	7.6	75	6.4
Canned fish products	"	20	28	33	5.1	40	3.7
Canned vegetables	"	48	103	153	12.3	250	7.4
Processed fruit products without sugar	"	31	52	60	7.6	90	6.0
Processed fruit products with sugar	"	58	65	75	2.9	95	2.9
Fruit juices	"	32	46	96	17.0	180	8.5
Fruit syrups	"	18	22	30	7.6	50	7.0
Powdered milk	"	5	7	15	11.6	25	6.8
Butter	"	5	7	13	10.1	30	8.5
Cheese	"	19	25	45	10.1	90	8.4
Pasteurized and sterilized milk	Liters	...	...	410	...	900	8.4
Refined alcohol	Thousands of hectoliters	31,422	32,039	53,595	5.5	65,000	3.4
Beer	"	4,752	9,704	10,004	7.7	12,500	3.5

The present pattern of production of the food processing in the principal activities will by and large be retained. That is, the leading activity will still be the production of processed foods, though there will be a slight reduction in its share. The pattern of production in 1978 was as follows: processed foods 81.0 percent, production of beverages 11.8 percent

and production of livestock feed 7.2 percent, while in 1985 we anticipate: processed foods 79.6 percent, production of beverages 12.2 percent and production of livestock feed 8.2 percent.

Viewed as a whole the projected domestic raw materials base covers the expected growth of the food processing industry. At the same time, this kind of growth of production also contributes to satisfying the total needs within the country and for export.

3. The Social Product and National Income of the Agroindustrial Complex Today and in 1985

In 1977 the social product of the agroindustrial complex had a share of 19.3 percent in the social product of the economy as a whole. A specific tabular survey (Table 12) has been drawn up to show the place and importance of the agroindustrial complex in the entire economy in 1985. The share of agriculture and the food processing industry is shown on the basis of projections of the growth of agricultural production and the growth rates of the social product of the entire economy, which was estimated at about 6 percent. In spite of the lower growth rate of 3.3 percent, in 1985 agriculture will still hold the most important place in the structure of the social product of the agroindustrial complex itself. However, the share of the agricultural complex will be somewhat lower, i.e., 17.5 percent. But the essential thing is that there will be significant changes in the makeup of the agroindustrial complex by sectors. That is, in 1977 the share of the private sector was 58.3 percent and that of the socialized sector 41.7 percent. In 1985 it is expected that the share of the socialized sector in the social product of the agricultural complex will be almost the same as the share of the private sector, i.e., 49.9 percent as against 50.1 percent. Another change is in the larger share of the food processing industry and a reduction of the share of primary agricultural production, which indicates that the agroindustrial complex is orienting more and more toward an increase in the share of final production. This is important not only to meeting various needs for food, but also to development of the entire economy.

The figures on the size of the social product of the various branches of the machinebuilding and chemical industries, as well as on sales of raw and processed foods, i.e., those industries which are producing means of production and rendering services for agriculture or are involved in the selling of agricultural products would complete the picture concerning the significance and size of the share of the agroindustrial complex as a whole. But official statistics do not at present offer such data.

It is anticipated that the per capita national income will grow considerably. In 1977 prices it would increase from 30,500 to 50,542 dinars in 1985. The national income of agriculture per member of the farm population, though still barely half of the average, would increase from 14,287 to 24,337 dinars. The income from nonfarm activities per member of the

nonfarm population would grow most slowly, though it still would be 2.5-fold greater than the income realized by those employed in agriculture, and it is expected that it will increase from 38,159 dinars in 1977 to 53,087 dinars in 1985. The principal reason for the faster rise of the per capita national income in agriculture is that agriculture will be increasing the national income at a time when the total size of the farm population and the farm labor force will be decreasing. The growth of per capita national income in nonfarm activities is also accompanied by a sizable growth of the nonfarm population and nonfarm labor force. But these are regular occurrences in all countries. Nevertheless, we should specifically emphasize the fact that the growth projected in agriculture would provide for a growth in the income of those employed in agriculture in the coming period.

Table 12. Social Product and National Income of the Agroindustrial Complex in 1977 and 1985, in 000 million dinars, 1977 prices

Indicators	1977		Growth Rate 1980-85	
	Social Product	National Income	Variant	
			I	II
Economy as a whole	736.4	664.2	6.0	6.0
Agriculture	107.0	100.2	3.5	4.0
Socialized sector	25.8	23.0	6.2	7.1
Private sector	81.2	77.2	2.6	3.0
Food processing industry	29.4	26.4	7.5	8.5
Food	22.6	20.6	7.3	8.0
Beverages	5.5	4.7	8.0	9.0
Livestock feed	1.3	1.1	9.5	12.0
Tobacco industry	3.6	3.4	3.0	4.0
Water management	2.5	2.3	8.0	8.5
Agroindustrial complex	142.5	132.3	4.6	5.3
Socialized sector	61.3	55.1	6.8	7.7
Private sector	81.2	77.2	2.6	3.0

Indicators	1985		Share of Agrocomplex, %		
	Social Product	National Income	1972 1977 1985		
			1972	1977	1985
Economy as a whole	1,174.4	1,059.3	100.0	100.0	100.0
Agriculture	142.3	132.8	16.4	14.5	12.1
Socialized sector	42.1	37.6	3.8	3.5	3.6
Private sector	100.2	95.2	12.6	11.0	8.5
Food processing industry	53.7	48.5	3.3	4.0	4.6
Food	40.5	36.9	2.4	3.1	3.4
Beverages	10.5	9.0	0.6	0.7	0.9
Livestock feed	2.9	2.6	0.3	0.2	0.3
Tobacco industry	4.5	4.2	0.7	0.5	0.4
Water management	4.8	4.4	0.3	0.3	0.4

Table 12 (continued)

<u>Indicators</u>	<u>1985</u>		<u>Share of Agrocomplex, %</u>		
	<u>Social</u> <u>Product</u>	<u>National</u> <u>Income</u>	<u>1972</u>	<u>1977</u>	<u>1985</u>
Agroindustrial complex	205.5	189.9	20.7	19.3	17.5
Socialized sector	105.3	94.7	8.1	8.3	9.0
Private sector	100.2	193.2	12.6	11.0	8.5

Note: The agroindustrial complex is given as the sum of agriculture, water management, the food processing industry and the tobacco industry. The national income for 1985 was computed on the basis of the share (percentage) of depreciation in the social product.

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CAPITAL ACCUMULATION OF ORGANIZATIONS OF ASSOCIATED LABOR

Belgrade JUGOSLOVENSKI PREGLED in Serbo-Croatian No 5, May 79 pp 201-206

[Analysis of statistical data by Dr Marijan Korosic, senior staff scientist of the Economics Institute, Zagreb, reviewed by Dr Ljubo Madzar, senior staff scientist of the Institute of Economic Sciences, Belgrade, and Egon Stajner, senior adviser in the Federal Bureau for Social Planning]

[Text] Principal Features of the Self-Management System of Distribution of Income and the System of Investments

The Yugoslav self-management system of the distribution of income differs essentially from other systems of distribution. The principal features of this system are the following:

- i. income is distributed in the context of social ownership of the means of production, self-management and the operation of the economic laws of commodity production (the market);
- ii. the funds to meet general public needs and community needs are established in self-management accords, social compacts or laws, in accordance with the trend of the social product of the entire economy and the productivity of total social labor, but within the limits set by the plans of sociopolitical communities;
- iii. after the portion of income intended to meet general public and community needs of society has been set aside, work collectives directly dispose of the remainder of income, but in conformity with a general self-management act on distribution of net income.*

The workers in associated labor, then, make the decisions on distribution of income. Self-management decisionmaking in the basic organization of associated labor must, however, be in conformity with the self-management

* For more on the distribution of income, see the survey entitled "Socialist Self-Managed Associated Labor," JUGOSLOVENSKI PREGLED, January 1979, pp 11-13 (11-13).

accord on the joint bases and scales which the workers of that organization have concluded with the workers of other basic organizations, or in conformity with the relevant social compact which they have concluded or have entered into (see Articles 114-124 of the Law on Associated Labor).

While there are certain specific aspects in the various republics and autonomous provinces, net income is still distributed "depending on the ratio of the income earned per worker in the basic organization of associated labor to that plan (the planned income for the grouping), so that at a higher level of income earned per worker the share of funds to promote and expand the material base of operation is larger in the net income of the basic organization of associated labor."* As we see, the decision comes down to qualitative choices which are not subject to quantification: neither personal incomes nor accumulation are made functionally dependent on the quantities which determine distribution of income.

In practice distribution is mainly based on these principles. Industries or basic organizations of associated labor whose income per worker is higher than the average by and large realize a higher personal income, but the proportion of that increase is not as great as the proportion of the increase of their income. The close correlation between income per worker and personal income per worker is not, however, furnishing a satisfactory rate of accumulation of the economy.

The decisionmaking of organizations of associated labor on the distribution of income is affected by general price policy, the policy of contributions and taxes, the policy of protection against foreign competition, the policy of interest rates on credits and other economic policy instruments.

On the scale of the entire economy decisions on money accumulation are also made by households, which deposit a sizable share of their income in savings accounts in banks. This portion of money accumulation necessarily brings about changes in allocation of total accumulation and thus has an appreciable impact on the intensity and direction of investment.

Distribution is also determined by the amount of income realized, which is a value expression of production relations, that is, in a stricter sense, an expression of the exchange of labor and its social verification. This is indeed indicated by an analysis of the principal factors in the income and accumulative capacity of the economy as a whole.

Labor productivity is the most significant source of income. The principal material condition for the earning of income is the equipment-worker ratio.

* Article 46 of the Social Compact on Conditions for the Earning of Income, on the Joint Bases and Scales for Distribution of Income and Net Income and Distribution of Funds for Personal Incomes in the Socialist Republic of Croatia (NARODNE NOVINE, No 2, 1978). There are similar provisions in the corresponding social compacts of the other republics and autonomous provinces.

All organizations of associated labor objectively have access to the same technical and technological procedures, and differences in the income earned, when they exist, are the result of different product choices, income choices and other decisions of individual work collectives, of their readiness, effort and ability to master a larger amount of better-quality means of production and to evaluate the relations between supply and demand on the market. Differences in the income realized may also occur because of a different attitude toward improvement of the material and technical base of operation and because of a lag behind technical progress in the industry. The level of labor productivity may largely depend, then, on the performance of self-managing collectives. The workers are not a passive appendage of the equipment-worker ratio and labor productivity, though they are not the only driving forces either. Income also depends on the social division of labor which has been accomplished, especially at the level of the economy's industries and groupings, and then on the technical division of labor, on the methods of organization chosen, on collection of the product mix, on innovations and efficiency proposals, and on "worker effort." All the workers of the basic organization of associated labor decide on the orientation in development, on the adoption of technological, commercial or other organizational improvements by making basic decisions of their own. In so doing they also assume the risk of losses.

In a self-managed economy there is a siphoning of income from one organization of associated labor to another through the institutional system as well. The absence of accumulative capacity or low level of accumulative capacity, and then also low personal incomes, in particular, are not always the result of poor conduct of business. The organization's income increases under the influence of the instruments governing primary distribution of income, such as rebates, premiums, compensation, artificially high prices, exemptions and privileges, the foreign exchange or foreign trade system, but it is diminished by higher taxes and contributions to the community.

Commodity production is also an essential factor in the realization of income; it favors the more successful producers, stimulates improvement of production, encourages a rise in the equipment-worker ratio and thereby performs its progressive role. The market mechanism, however, often does not function as it should because of restricted competition or regional closing off of markets, or a monopoly on better engineering and technology. All this has an influence on the greater or lesser opportunities of realizing income.

Decisions on use of the capital surplus formed, i.e., on investments and their allocation by sector and region, are made at various locations. In the Yugoslav context it is not an absolutely strict rule that these decisions always be made on one's own money accumulation created by previous decisions on distribution of income earned. The decisionmakers vary depending on whether investment is being made in infrastructural facilities or new investment projects or whether existing facilities are undergoing reconstruction and expansion.

The following basic instruments have in recent years figured in decisions on investments:

- 1) the planning and coordination of plans through social compacts and accords;
- 2) protection of investors and producers against the risk of involvement in the world market, and even a kind of sheltering from domestic competitors (disparity prices, a highly differentiated system of tariff and nontariff protection, building permits for projects, and so on);
- 3) mandatory pooling and channeling of funds (whereby in some cases government coercion makes up for inadequate accumulative capacity and the low mobility of the capital surplus);
- 4) fiscal policy, through which it is possible to define a certain sectoral orientation of accumulation through exemptions to particular sectors or by tightening conditions on investments;
- 5) credit policy as the most important instrument in the guidance of investments (the level of the interest rate, subsidized interest rates for particular activities, on resources from the relevant social funds, the proportion of "own" participation to the credit obtained, rediscount credits under various conditions, special-purpose credits from the Fund for Development of the Underdeveloped Republics and Provinces, the guidance of foreign credits, the obligation of punctual payment, and so on).

The instruments for regulating the volume of capital formation and for guiding use of the capital surplus are rather scanty. By and large there are no effective penalties if capital investments do not yield the expected results. There are no economic incentives which would encourage economic decisionmakers to pursue not only their own expansion, but also to invest their funds in development of other economic activities. The fragmentary nature of the capital surplus, scattered among the countless entities carrying on economic activity and forming capital, when the incentives we have mentioned are lacking, is an objective obstacle to the mobility of capital.

For years Yugoslavia has achieved a very high growth rate of the social product, higher than 7 percent annually, putting it in the group of countries with the fastest growth in the postwar period. The gap has been narrowed between its level of development and the advanced countries. In the first 3 years of the current 5-year plan (1976-1980) material development has also been very dynamic. The social product of the entire economy increased at an annual rate of about 6 percent in those first 3 years. The average growth rate of investments in fixed capital, at about 9.5 percent, over these three years has brought a strong growth of production capacities in all the production industries. It can be said that this is one of the most dynamic stages in Yugoslavia's sociomaterial development.

A new 5-year development plan is being prepared in Yugoslavia; it is very important for both domestic and external reasons. A realistic examination and analysis of the past trend of accumulative capacity and reproductive capacity of organizations of associated labor, which are the basic and decisive segment of the Yugoslav economy, will make it possible to formulate more realistically and optimally the development policy and structural transformation of the Yugoslav economy which will facilitate its rapid development.

Global Trends of Capital Formation

Since the beginning of the seventies there has been a tendency toward lower accumulative and reproductive capacity of productive activities. The economy's accumulative capacity and reproductive capacity have not essentially improved even in years of markedly favorable economic activity and a considerable nominal growth of all forms of consumption, such as the year 1978.* This is pointed up by indicators of accumulative capacity: the share of accumulation** in income and the share of accumulation in net income (Table 1).

Table 1. Indicators of the Accumulative Capacity of Organizations of Associated Labor in the Economy, in percentage

	<u>Share of Accumulation in</u>	
	<u>Income</u>	<u>Net Income</u>
1971	15.8	23.8
1972	13.6	21.0
1973	16.4	25.3
1974	18.2	28.2
1975	13.5	21.1
1976	6.9	11.5
1977	10.4	18.8
1978	10.8	20.1

All three indicators given were two-thirds lower at the end of 1978 than at the beginning of this period, but they were lowest in 1976. The 3-percent

* All the data have been taken from year-end financial statements. The data for 1978 are not final. The basic method developed in the Economics Institute, Zagreb, was used in working up the data.

** By accumulation [also referred to as capital formation and capital surplus in this translation] is meant allocation from income which the organization of associated labor makes to the business fund and the reserve fund, depreciation set aside over and above the minimum legal rate, appropriations to joint reserve funds because of special incentives, allocations for the credit financing of the more rapid development of the underdeveloped republics and provinces and transfers to the other funds of the organization.

level of reproductive capacity in 1978 is low in absolute terms with respect to the possibilities and needs of economic development.

Table 2. Rates of Accumulative and Reproductive Capacity of Organizations of Associated Labor in the Economy, in percentage

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Share in average business capital employed:								
Of accumulation	10.6	5.0	4.5	5.7	3.9	1.7	2.9	3.0
Of accumulation plus contractual obligations	16.9	8.9	7.6	8.8	7.0	4.6	6.2	6.3
Share of accumulation in "own" business capital	6.7	6.1	7.8	9.9	5.5	2.8	...	...

We should bear in mind that quite recently, especially since 1976, fixed assets have been regularly reevaluated in view of the need and demand for more realistic expression of the results of business operation in the context of a high rate of inflation. That is why the levels of reproductive capacity are not altogether comparable. In the earlier years they were actually lower than follows from the figures given, since the value of capital was underestimated. Consequently, the reproductive capacity of the economy has been low throughout this entire period, but the declining trend has been less striking than it appears from the figures given.

Distribution of Income

In functional terms there are five aggregates in distribution of the income of organizations of associated labor: (1) contractual obligations and obligations under agreements (interest on credit, membership dues in chambers and associations, court costs, penalties and fees, insurance premiums, costs of banking services and payments and collections and other fees); (2) obligations to meet general social needs, which are made up of income taxes paid to the opstina, the republic or the autonomous province, and the portion of income for nationwide defense and social self-protection; (3) allocations from net income to meet community needs, which cover contributions from income to self-managed special-interest communities in the fields of education, finance, culture, health care, social welfare and other social services, contributions to old-age and disability insurance, employment security and social security of workers and the portion of income to preserve, improve and protect workplace health and safety and the environment; (4) all worker earnings expressed in net amount, i.e., after deduction of the contribution from personal income, consisting of the personal incomes of workers and portions of net income earmarked for housing construction and other purposes comprising community consumption; (5) accumulation, which consists of appropriations from net income to the business fund, the reserve fund and other funds, as well as depreciation over and above the legal rates.

Figures on distribution of the income of the economy (Table 3) are indicative of the principal mechanism in the decline of the accumulative capacity of organizations of associated labor.*

Table 3. Distribution of the Net Income of the Economy, in percentage

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Assignments from income:								
Total	37.1	38.5	35.4	35.5	36.2	40.6	44.9	46.4
For contractual obligations and obligations under agreement	9.5	10.7	11.0	10.0	10.5	12.0	11.5	12.1
For general social needs	5.1	5.3	6.5	9.1	2.3	2.6	2.7	3.0
For community needs of society	19.1	19.2	17.8	16.4	23.2	26.0	30.7	31.3
For other obligations	4.5	3.3	0.1	--	0.2	--	--	--
Net personal incomes	47.1	47.9	48.2	46.4	50.3	52.6	44.6	42.7
Accumulation	15.8	13.6	16.4	18.2	13.5	6.8	10.4	10.8

The share of contractual obligations in the distribution of income has been increasing, and at the end of the period was two index points higher than at the beginning. This change is not large, but it is indicative. At the end of the period contractual obligations were equal to net money accumulation. There has been an essential change in the share of income earmarked for community purposes, net personal incomes and accumulation. Up until 1975 the greatest changes were actually only in the share of net personal incomes and accumulation. That is, the share of outlays for worker consumption in income increased from 47 percent in 1971 to 50 percent in 1975, which is three percentage points, the amount by which the share of accumulation diminished over the same period (from 16 percent to 13 percent). After 1976, however, allocations to meet community needs have been increasing steadily both at the expense of worker personal incomes and also at the expense of accumulation. According to preliminary figures for 1978, the share of personal incomes in income has diminished somewhat more than the share of accumulation because of the growth of obligations.

It is evident from the composition of the distribution of income that accumulative capacity need not increase merely because fiscal payments have

* It should be borne in mind that these figures on the distribution of income of organizations of associated labor do not cover all forms of obligations on the basis of taxes and contributions: the turnover tax, import charges and customs duties. The financing of funds and the budget is also based in part on indebtedness to the National Bank. For that reason the survey of the distribution of income given here is only partial; it is necessary to point up the behavior of the principal participants in economic activity.

diminished. There is, however, a lower limit on the allocation for accumulation, a limit that is not set by the level of investment, but by the level of prior indebtedness to the banks and other creditors, as well as by legal statutes.

Figures on the composition of accumulation by sources of this capital also indicate the behavior of organizations of associated labor in distribution (Table 4).

Table 4. Composition of Accumulation by Sources, in percentage (total accumulation = 100)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Share of income for:								
Business fund	86.9	93.8	57.2	61.2	59.7	85.3	65.1	62.7
Reserve fund	11.1	12.1	10.1	9.6	11.3	20.7	17.4	21.1
Depreciation over and above the legal rate	26.8	28.5	21.8	16.8	20.3	20.4	4.0	8.4
Other funds	4.9	5.1	24.5	20.6	35.9	61.1	43.3	29.5
Loss	-29.7	-39.5	-13.6	- 8.2	-27.2	-87.5	-28.8	-21.7
Decisions governing formation of accumulation:								
Autonomous decisions*	84.0	82.8	56.4	69.8	52.8	18.2	40.3	49.4
Legal statutes**	16.0	17.2	34.6	30.2	47.2	81.8	59.7	50.6

* A portion of income to the business fund and depreciation above prescribed rates is set aside by autonomous decisions.

** The reserve fund and other funds are formed by legal statutes.

When organizations of associated labor show a positive result at the end of the operating period, they make independent decisions on assignment of a portion of income to the business fund and on depreciation of fixed assets over and above the legally prescribed minimum rates. All other transfers to accumulation are prescribed by various measures. The autonomous decisions of organizations of associated labor controlled four-fifths of accumulation in the socialized sector at the beginning of the seventies, but in 1978 only half of it. In 1976, when accumulative capacity was in any case the lowest, less than one-fifth of accumulation was formed by the autonomous decisions of organizations of associated labor, and more than four-fifths by legal statutes. Accumulation is in fact a residual item in distribution.

Principal Features of the Trend of Economic Investments

The decline of the accumulative and reproductive capacity of organizations of associated labor in the economy is not, however, bringing about a reduction of economic investments. On the contrary, the share of investments in the final distribution of the social product (thanks to the effect of all the mechanisms of redistribution, inflation in particular), has held steady at a high level. With investments holding a share of nearly 45 percent of the social product, Yugoslavia is among the countries with the highest rate of investment. Maintaining a stable high level of investment speeds up economic development when the funds are well placed, makes it possible to resolve structural imbalances, and guarantees a growth of employment. However, if accumulation is not spent rationally, the economy is brought into a condition of overindebtedness and dependence on external sources of financing, and the new jobs created do not bring a secure existence to those employed, since sufficient income is not earned with the new facilities, capital is frozen in unfinished investment projects, and future accumulation is diminished. The real problem of investment in Yugoslavia lies in optimum spending and good placement of accumulation, which can be improved if the economy is oriented more toward its own sources of accumulation.

Indicators on the ratio of the growth of average business capital employed in the current year and the growth of accumulation or the growth of accumulation plus depreciation point up the high propensity to invest (Table 5).

Table 5. Growth Rates of Business Capital Relative to Accumulation and Total Funds for Investment

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Growth of average business capital employed in the current year relative to:							
Growth of accumulation	10.80	8.40	3.40	5.70	16.30	7.80	7.70
Growth of accumulation plus depreciation	5.90	4.90	2.00	3.20	5.10	3.40	3.50
Level of self-financing	0.17	0.20	0.50	0.31	0.20	0.29	0.29

In all years of this period the growth of business capital exceeded the growth of accumulation several times over. Though the influence of reassessment of fixed capital was not eliminated from the growth of business capital, large differences between accumulation and the growth of business capital show that the volume of investments of organizations of associated labor is considerably higher than the funds available for investments. The differences between the growth of business capital and total funds available for investment are as a rule half as large (except in 1976, when a sizable reassessment of capital was made, but even in that year the growth of business capital was 2-3-fold greater than the available money funds earmarked for investment).

The rate of self-financing of the total socialized sector of the economy is very low, which means that in the various sectors and certain organizations of associated labor it is even considerably lower than the average.

The commitment of organizations of associated labor to high investments is also shown by figures on the level of fixed and working capital, income and accumulation per conventional skilled worker (Table 6). In 1976 the average was 259,528 dinars of fixed and working capital per worker (conventional skilled worker). In that same year the conventional skilled worker realized 63,565 dinars of income--fourfold greater than the value of fixed and working capital, and 4,355 dinars of accumulation--one-sixtieth of the value of fixed and working capital per conventional skilled worker.

Table 6. Fixed and Working Capital, Income and Accumulation Per Conventional Skilled Worker

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
In thousands of dinars:						
Income	26,029	29,474	36,798	48,594	56,357	63,565
Accumulation	4,111	4,013	6,035	8,830	7,618	4,355
Average business capital employed	38,858	80,487	132,975	156,014	193,777	259,258
Ratio between average business capital employed and:						
Income	1.5	2.7	3.6	3.2	3.4	4.1
Accumulation	9.4	20.0	22.0	17.7	25.4	59.5

As a consequence of the high investment on the one hand and low accumulation on the other, the use of accumulation in the economy is committed in advance because of the need to pay off investment credits. The economy's indebtedness is rising. Payments against credits coming due in the current year are growing faster than the funds available for investment (accumulation plus depreciation of fixed capital), and the funds available for investment over and above repayment of debts are smaller and smaller. Thus the share of payments against investment credit has had the following share in funds available:

<u>Year</u>	<u>%</u>	<u>Year</u>	<u>%</u>
1971	50.0	1974	36.0
1972	49.8	1975	43.2
1973	38.1	1976	68.3
1974	32.1	1977	80.5

The economy as a whole has gradually been getting into a situation where the funds representing prescribed amortization (which in the general view is economically inadequate for the justified renewal of fixed assets) are being committed to repayment of credit. Certain organizations do not have sufficient funds even for simple reproduction. The real situation is still more serious, since in many cases banks are postponing collection of payments due against credits. Nevertheless, they are usually collecting only a portion of the payments, but since late collection does not affect the business results of the bank, neither the bank nor the investor bears the consequences. So the demand for investment credits does not weaken. In this way it is not possible to ensure the efficiency of investments on the scale of the entire economy, nor that the available funds will be concentrated in order to correct structural disproportions, nor that they will be centered on major programs pertaining to the infrastructure and other sectors.

The difference between investments and the available funds is made up from personal savings in banks and the use of foreign loans and credits.

Individuals, who are saving more than they are borrowing, are realizing a large portion of the accumulation in the country. Individuals entrust a portion of their savings, whose spending they are deferring, to the commercial banks. Banking organizations channel the dinar and foreign exchange savings into the flows of expanded reproduction. At the end of 1978 the money accumulation of individuals amounted to 223 billion dinars; this means that the resources of individuals are in large part being placed in the socialized sector by the banking mechanism. These funds represent all of 49 percent of the money indebtedness of organizations of associated labor, though they need not strictly be placed in economic organizations.

Personal savings have been growing steadily at high rates, a phenomenon that is contributed to by the rapid rise of personal incomes and remittances from workers employed abroad temporarily. The banks pay interest to savings depositors and guarantee the deposits. The interest rates which the banks will collect from those who borrow depend on the interest rate paid on savings.

Capital also comes from abroad through the indebtedness of sociopolitical communities, organizations of associated labor and commercial banks. The use of foreign loans and credits is growing steadily. This makes up for the shortage of capital from domestic sources, but to a considerable extent it puts a burden on future income. It has been calculated that the country's total foreign debt at the end of 1978 represented two-fifths of the total debt of organizations of associated labor to the banking sector.

The motivation behind the use of foreign loans and credits is not only the need to purchase up-to-date equipment, but also the favorable terms of purchase, since domestic organizations of associated labor, because of the shortage of capital, are unable to supply credit to finance the sale of

equipment in Yugoslavia. That is why domestic production of equipment is less than what it might be.

Foreign credits are more expensive than domestic credits, but the constant changes in rates of exchange are increasing the amount of indebtedness and the burden consisting of payments against those credits and interest on them. This also accentuates insecurity in the conduct of business and the planning of future projects.

At a time when all currencies are losing value, payments to return credit are relatively more favorable than under stable conditions. Foreign indebtedness, however, might be regarded as beneficial for developing countries--like Yugoslavia--if with respect to the lines of investment, selection of capacities and optimization full respect were paid to the parameters that apply in stable, but not in inflationary conditions. As a rule, however, this is not the case, and the developing countries are suffering more from inflation in the world than one might at first conclude.

Since the capital formed out of distribution of the income of organizations of associated labor covers only the minimum ("positive zero") "own" participation in the reproduction of assets and the financing of future development, even the sources of capital coming from personal savings and abroad cannot cover the volume of real investments. Force, then, is used to cover real investments. Development up to this point has created a production apparatus which is manufacturing goods and rendering services for investment projects (Department I), and it, with the willingness and motivation of all self-managed organizations of associated labor to engage in larger and larger investments, finds ways of increasing the volume of investment and thus obtains a market for its products. This is where the mechanism of deficit financing begins to operate.

The mechanism of deficit financing looks basically like this: organizations of associated labor are required to furnish in advance the resources planned for investment projects and punctually to meet obligations in connection with loans previously taken. However, this obligation is often violated, especially because the planned investments, because of lateness or other delays in construction of investment projects, are ordinarily larger than the funds needed to cover the rising costs of investments produced by inflation. Additional funds are sought, and since as a rule "own" capital is insufficient, and since the pooling of labor and capital has still not developed, bank credit is resorted to. The banks commit all the resources they can lay their hands on, obtained from individuals and from abroad, and since even that is insufficient, they "cover" investment credits from short-term sources in response to various influences, including even pressures. The transformation of short-term sources into long-term lendings is taking on ever greater proportions. Thus long-term lendings were 20 percent larger than sources at the beginning of the seventies and 85 percent greater in 1978.

The transformation of short-term sources into long-term lendings has been objectively made possible by the dynamic growth of the money supply, through which the volume of money in the flows of reproduction is increasing. In 1976 the money supply increased 48.4 percent, in 1977 32.7 percent, and in 1978 26.8 percent (the average increases over the entire year computed from the figure for each month). Such growth rates, especially in the recent past, are making it possible for a sizable portion of short-term resources to be siphoned over into investment projects.

The results of the deficit financing of investment projects is an inflationary rise in the general price level. The high propensity of the self-managed economy to invest without adequate capital backing is reflected in relations on the balance sheets of the banks, which the banks are unable to resist however they might be reorganized and "transformed" from what they are at present.

It is therefore necessary to cover real investments with money accumulation. Only in that way is it possible to correct forcible accumulation, to mitigate inflationary pressures and to create the prerequisites for efficient investment, i.e., for real growth of the social product between 5 and 6 percent (which is now being achieved with high investments) to be achieved with a smaller share of investments in the social product.

Sectoral Distribution of Capital Formation

Taken individually, the largest sector of the economy is industry. In 1976 it employed 46.5 percent of the total number of workers in organizations of associated labor and realized 45.6 percent of the income. After industry, the next largest sector is trade and hostelry, and then come construction, transportation, agriculture and fishing, the crafts and trades, housing and municipal services and utilities, and forestry (Table 7).

Table 7. Organizations of Associated Labor in the Economy

	<u>Number of Orga- nizations of As- sociated Labor</u>	<u>Income, in millions of dinars</u>	<u>Number of Workers</u>
1971			
Total	12,691	124,728	3,422,301
Industry and mining	2,628	5,6587	1,529,908
Agriculture and fishing	1,657	9,742	279,339
Forestry	143	1,933	60,111
Construction	886	12,063	377,942
Transportation	417	12,209	329,136
Trade and hostelry	3,390	23,195	585,739
Crafts and trades	2,547	5,620	172,395
Housing and municipal services and utilities	1,023	3,379	87,730

Table 7 (continued)

	<u>Number of Orga- nizations of As- sociated Labor</u>	<u>Income, in millions of dinars</u>	<u>Number of Workers</u>
	1976		
Total	24,422	361,621	3,943,657
Industry and mining	7,125	164,901	1,833,173
Agriculture and fishing	3,038	24,953	255,294
Forestry	518	4,785	62,766
Construction	1,871	37,772	436,334
Transportation	1,628	33,684	374,398
Trade and hostelry	5,397	64,578	622,635
Crafts and trades	2,841	20,587	255,277
Housing and municipal services and utilities	2,004	10,361	103,780

Rates of Capital Formation of the Principal Sectors. The rates of accumulation differ from sector to sector of the economy (Table 8). Up until 1974 trade (together with hostelry) was the sector with the highest accumulative capacity. The rates of accumulation of trade, on the basis of both indicators, were half again as favorable as the average for the economy in 1971 and three-fourths again as favorable in 1976. But accumulative capacity is slackening in trade, but slower than in the rest of the economy. However, recently trade has given over the lead in accumulative capacity (relative) to housing and municipal services and utilities, where, with certain fluctuations, accumulative capacity is practically without reduction.

Agriculture and transportation are among the sectors with low accumulation. In 1971 agriculture was at the bottom of the list and had absolutely the lowest accumulative capacity with respect to both indicators. In 1976 the accumulative capacity of agriculture was higher than the average for the economy, and it yielded last place in accumulative capacity to transportation.

Table 8. Accumulative Capacity by Sectors of the Economy

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Accumulation Relative to Income						
Total	0.158	0.136	0.164	0.182	0.135	0.069
Industry and mining	0.143	0.128	0.167	0.208	0.153	0.045
Agriculture and fishing	0.125	0.102	0.171	0.172	0.116	0.080
Forestry	0.162	0.119	0.164	0.209	0.147	0.061
Construction	0.151	0.132	0.122	0.115	0.095	0.082

Table 8 (continued)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Transportation	0.128	0.057	0.122	0.091	0.087	0.016
Trade and hostelry	0.226	0.207	0.205	0.208	0.146	0.122
Crafts and trades	0.151	0.146	0.136	0.141	0.109	0.068
Housing and municipal services and utilities	0.203	0.184	0.169	0.142	0.152	0.192
Accumulation Relative to Net Income						
Total	0.238	0.210	0.253	0.282	0.211	0.115
Industry and mining	0.215	0.196	0.262	0.320	0.239	0.078
Agriculture and fishing	0.189	0.162	0.270	0.274	0.194	0.159
Forestry	0.230	0.175	0.237	0.300	0.217	0.096
Construction	0.218	0.193	0.182	0.175	0.143	0.127
Transportation	0.197	0.094	0.196	0.151	0.142	0.028
Trade and hostelry	0.352	0.330	0.312	0.322	0.232	0.202
Crafts and trades	0.216	0.211	0.198	0.209	0.161	0.107
Housing and municipal services and utilities	0.297	0.271	0.250	0.217	0.226	0.287

Accumulative capacity in the industrial sector, with rare exceptions, has mainly been higher than the average for the entire economy over this entire period. However, in 1976 it dropped appreciably, so that in that year industry was among the sectors with the lowest rates. Only transportation fell below industry at the end of that period. It is probable that this occurred in these sectors mainly because of the more realistic assessment of assets; that is, both sectors are capital-intensive.

Throughout this period the differences in accumulative capacity have grown. On the one hand we have housing and municipal services and utilities, whose accumulative capacity is virtually not dropping, and on the other transportation, which is hardly forming capital at all.

Marked differences also prevailed at the beginning of this period between the various sectors of the economy with respect to reproductive capacity, measured in terms of accumulation relative to average capital employed (Table 9). In 1971 the sectors able to use their own capital to improve and expand their total business assets most rapidly were crafts and trades (at a rate of 19.2 percent) and construction (15.5 percent), while the sectors able to do this most slowly were forestry (2.9 percent) and transportation (4.7 percent). The levels of reproductive capacity have dropped in all sectors, so that at the end of the period they were markedly low: most ranged about 1 percent, the lowest was in transportation (0.4 percent), and the highest in housing and municipal services and utilities (5.1 percent) and in crafts and trades (4.1 percent).

Table 9. Levels of Reproductive Capacity by Sectors of the Economy

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Accumulation Relative to Average Business Capital Employed						
Total	0.106	0.050	0.045	0.057	0.039	0.017
Industry and mining	0.058	0.046	0.046	0.066	0.043	0.010
Agriculture and fishing	0.044	0.029	0.043	0.049	0.030	0.018
Forestry	0.029	0.021	0.031	0.054	0.034	0.010
Construction	0.155	0.118	0.063	0.063	0.046	0.035
Transportation	0.047	0.013	0.029	0.025	0.028	0.004
Trade and hostelry	0.108	0.085	0.046	0.048	0.033	0.028
Crafts and trades	0.192	0.159	0.094	0.099	0.072	0.041
Housing and municipal services and utilities	0.104	0.067	0.052	0.047	0.048	0.051
Accumulation Relative to "Own" Sources of Business Capital						
Total	0.067	0.061	0.078	0.099	0.055	0.028
Industry and mining	0.071	0.068	0.096	0.129	0.069	0.020
Agriculture and fishing	0.049	0.042	0.077	0.085	0.032	0.028
Forestry	0.026	0.020	0.033	0.059	0.026	0.010
Construction	0.143	0.122	0.106	0.108	0.066	0.062
Transportation	0.031	0.015	0.035	0.034	0.028	0.005
Trade and hostelry	0.153	0.136	0.125	0.136	0.077	0.066
Crafts and trades	0.153	0.146	0.131	0.147	0.095	0.060
Housing and municipal services and utilities	0.018	0.015	0.017	0.018	0.014	0.022

Approximately the same relations are also obtained when reproductive capacity is taken in terms of the ratio of accumulation to "own" business capital. On the basis of this indicator the most propulsive sectors are trade (with a rate of 15.3 percent at the beginning of the period and 6.6 percent at the end) and construction (14.3 percent at the beginning and 6.2 percent at the end). It is interesting that housing and municipal services and utilities fall among the poorest sectors with respect to this indicator because they have a relatively high share of "own" capital in total business capital. Transportation is again in last place with respect to this indicator, and its levels verge on zero.

In all years industry is reproducing its own capital at a level higher than the average for the economy: at a rate of 12.9 percent in 1974, and at a rate of 2 percent 2 years later, when the stagnation of economic activity set in. Agriculture and forestry have a very low rate of reproduction of their "own" capital.

Redistribution of Real Accumulation and Indebtedness. Between accumulative capacity on the one hand and the growth of business capital on the other there is by and large no interdependence (Table 10). Transportation, which is forming practically no capital, has an enormous growth of business capital. And industry, though its accumulation is low, is recording a high growth of business capital, though up until 1976 this ratio was below the average. Since the influence of reassessment of assets has not been excluded from the indicator on the growth of business capital relative to accumulation, and since the reassessment is actually the result of the affect of inflation, this indicator gives a kind of survey of redistribution of real accumulation by all possible mechanisms, including inflation. In the economy, then, a redistribution is taking place on a large scale. The augmentation of capital actually used may be even several tens of times greater than the accumulation achieved. For example, to take only 1976, the growth of business capital exceeded the accumulation achieved by the following factors: 72-fold in transportation, 29-fold in industry and 20-fold in agriculture. There are essential differences from sector to sector.

The use of accumulation and depreciation to repay investment credits was moderate right up until 1976. Until then, that is, the economy as a whole used about 50 percent or less to repay investment credits (Table 11).

Table 10. Growth of Business Capital Relative to Accumulation by Sectors of the Economy (accumulation = 1)

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Total	10,814	8,354	3,384	5,730	16,325
Industry and mining	6,198	7,994	2,996	5,879	29,075
Agriculture and fishing	10,912	7,254	3,113	2,675	20,233
Forestry	4,848	4,294	1,860	6,226	33,932
Construction	2,223	8,030	3,589	7,059	8,636
Transportation	31,813	6,895	3,114	3,364	72,571
Trade and hostelry	3,142	11,502	4,947	6,722	5,802
Crafts and trades	1,972	4,851	2,649	5,244	5,928
Housing and municipal services and utilities	6,055	5,636	3,283	4,688	7,387

Industry is in first place among the sectors of the economy with respect to the share of payments to return investment credits in total resources available for investments. In the first years transportation also had a high index, but it later dropped to zero either because there were no funds to repay investment credits or because new credits were no longer taken. It is interesting that the other sectors of the economy have a relatively small amount of outstanding credits; these are construction, forestry, the crafts and trades, housing and municipal services and utilities, and even trade.

Table 11. Share of Payments to Investment Credits in Total Resources Available for Investment Among the Sectors of the Economy

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Total	0.500	0.498	0.381	0.321	0.360	0.432
Industry and mining	0.669	0.628	0.444	0.332	0.524	0.701
Agriculture and fishing	0.621	0.590	0.372	0.314	0.106	0.154
Forestry	0.129	0.169	0.121	0.087	0.031	0.059
Construction	0.192	0.162	0.174	0.152	0.051	0.043
Transportation	0.732	0.842	0.555	0.447	0.047	0.036
Trade and hostelry	0.199	0.220	0.240	0.328	0.378	0.436
Crafts and trades	0.179	0.179	0.170	0.164	0.256	0.335
Housing and municipal services and utilities	0.196	0.202	0.151	0.169	0.018	0.019

The present method of forming accumulation and of balancing money and real trends does not create the prerequisites for fuller affirmation of economic optimality in the various processes of management in the economy, such as utilization of fixed and working capital and other material factors, use of labor, organization of the conduct of business, control, and expansion of markets. The undertaking of investment projects, i.e., "investment-mania"--which is only after the fact, that is, haphazardly, covered by inflation and similar mechanisms, is not a good foundation for internal efficiency, nor for rational conduct of economic policy. The rates of reproduction of total assets (at about 3 percent) and the rates of reproduction of "own" assets (slightly above 3 percent) do not furnish a reliable support for lasting and stable growth of the economic potential.

The sectoral allocation of accumulation is creating considerably greater problems than its size. Economic activities which are capital-intensive are as a rule recording a low rate of accumulative capacity and reproduction. A very great deal is being invested, and the share of the economy in financing expanded reproduction will probably continue to decrease.

The procedure for adoption of the program of activities and measures to improve the accumulative and reproductive capacity of the economy is nearing an end in the SFRY Assembly. Because of the very great importance which they have, priority has been given to the emergency measures, which are aimed at the following: that business be conducted as efficiently as possible with the available resources and that the largest possible amount of income be earned through optimum expenditure of current labor; to prevent more rapid growth of assignments for general social and community needs than the growth of income and a faster growth of net personal incomes than labor productivity and income earned; to bring investments in fixed capital into conformity with resources actually available for expansion of the material foundation of operation; to base the financing of investment projects more and more on the pooling of labor and capital, and, related to that, to replace credit relations as rapidly as possible by self-management forms of pooling labor and capital. In addition, we can expect that consistent enforcement of the basic components of the system of social planning in the drafting of the Yugoslav social plan for the period 1981-1985 and fulfillment of that plan will have a long range impact toward increasing the economy's accumulative capacity.

WORKERS ABROAD, REINTEGRATION OF RETURNEES

Belgrade KOMUNA in Serbo-Croatian 3 Mar 80 pp 35-38

[Article by Milenko Pavlovic: "The Policy Governing the Employment of Yugoslav Citizens Abroad, Their Return and Reintegration"]

[Text] In the mid-sixties, when our society, realizing all the adverse effects of extensive hiring, made a resolute change of direction toward intensification of the conduct of economic activity, which resulted in reduction of the overall possibility of creating jobs in the country, some of our citizens decided to take employment abroad temporarily. At the same time, the economic boom in the countries of western and northern Europe brought about a high demand for manpower which could not be met with domestic workers, so that a large number of foreign workers were hired.

In the period 1966-1973 on the average about 130,000 persons were hired through employment security communities or without their help, and the result was a rapid increase in the number of Yugoslavs employed abroad temporarily. The number of those persons reached its highest level at about 1.1 million in 1973, about 80 percent of whom were employed in the countries of western and northern Europe, in West Germany most of all.

The large-scale departure of Yugoslavs to work abroad in that period, which was based on the premises that this was temporary and that they would gradually return from employment abroad to find jobs in the country, also determined society's overall policy toward Yugoslav departing and taking employment abroad. The measures and activities through which that policy was actually implemented were aimed at organized hiring and the fullest possible regulation of the basic issues concerning protection of the rights and status of our citizens during their stay outside the country, along with constant monitoring of intergovernmental agreements and other instruments and their enforcement in practice, as well as maintenance of continuity of communication between Yugoslavs abroad and their homeland. Implementation of the principle that this was a temporary situation resulted in a number of measures and efforts aimed at creating conditions for reducing the outflow and at the gradual return and reintegration of those returning from employment abroad.

Quite large scale return flows resulted from the creation of opportunities for more hiring and employment at home, as well as the economic recession caused by the energy crisis in the host countries. Many host countries adopted bans on the further hiring of foreign workers, and adopted in their policy an orientation toward reduction of their total number. This led to a substantial reduction in the number of departures of Yugoslavs, especially on an organized basis, while at the same time a large number of Yugoslavs were returning and finding employment or engaging in self-employment on their own farms or in the private sector of nonfarm activities.

Some Estimates and Figures on the Outflow and Return of Yugoslavs From Temporary Employment Abroad and Their Composition

According to estimates, at the end of 1978 there were about 675,000 Yugoslavs temporarily employed in the countries of western and northern Europe, about 36 percent of whom were employed in West Germany, 18 percent in Austria, 9 percent in France and about 3 percent in Switzerland. If we compare the number of persons employed in 1973 and 1978, we see that the number dropped by about 200,000; however, the size of the return flow is far greater because of the tendency for dependent members of families to enter the labor force.

At present we do not have precise figures on the number of Yugoslavs employed abroad, and consequently it is not possible to analyze their composition, the volume of the return flow, and so on. Precise figures on Yugoslavs employed abroad exist only for those people who registered with employment security communities when they departed (organized departure), or who after returning to the country registered with employment security communities, regardless of whether they registered with them when they went abroad or not. In the basis of the figures of the Federal Employment Security Bureau, at the end of 1978 there were 473,300 persons employed abroad who went through our employment security agencies, 75 percent of them in West Germany, 11 percent in Austria and 6.2 percent in France.

Figures on the number of people who went abroad through employment security communities show that 1974 was the turning point in hiring. Whereas in the 1966-1973 period on the average more than 80,000 persons (125,000 in 1973) went abroad to work through employment security communities, in 1974 the outflow was 10,000, and then there was a steady declining trend until in 1978 the number of these persons amounted to only about 3,500. However, it is estimated that in the 1974-1978 period between 20,000 and 30,000 people went abroad to work temporarily on their own, most of them seasonal workers who took employment on seasonal work in Austria and Switzerland.

As we have already said, there are no precise figures on the composition of Yugoslavs employed abroad except for persons who were registered with employment security communities or the figures obtained in the 1971 Population Census.

As for the composition of persons who took employment abroad through employment security communities, 79.6 percent* are persons lacking a specialized occupation, that is, semiskilled and unskilled workers, 18.4 percent are skilled and highly skilled workers, 1.4 percent are persons with secondary specialized training, and 0.6 percent have junior and senior post-secondary training. However, we should also bear in mind that in organizing hiring the employment security communities took the policy governing hiring into account, and they gave priority to finding employment for personnel in surplus categories and persons without skills. We can therefore assume that the composition of the total number of Yugoslavs employed abroad with respect to skills is somewhat different, that is, that the share of trained people is somewhat higher. It is also estimated that the share of women is about 35 percent, which is at the level of the share of employed women in Yugoslavia.

With respect to the republic or province of origin, the people registered with employment security communities and employed abroad are distributed as follows: 28.2 percent from Bosnia-Herzegovina, 1.3 percent from Montenegro, 32.4 percent from Croatia, 6.9 percent from Macedonia, 5.3 percent from Slovenia, 13.0 percent from Serbia proper, 6.7 percent from Kosovo and 6.2 percent from Vojvodina.

It is estimated that aside from Yugoslavs employed abroad, there are about 375,000 members of their families. Also, according to estimates, the number of dependents is increasing because of the process of reunification of families and children born abroad.

The processes of family reunification and related changes in the composition of Yugoslavs abroad are closely related to the effort of the host countries to stabilize the number of migrant workers at a particular level and to integrate them more and more into their society.

Return and Reintegration

Achievement of the gradual return and reintegration into our society of Yugoslavs who have been temporarily employed abroad, as already stated, is one of the basic goals of the policy governing employment abroad.

Up until 1973, so long as the outflow far exceeded the return flow, the return and reintegration of our citizens took place haphazardly to a great degree. When the hiring of foreign workers was stopped and large-scale return flows began after 1973, the return was again dictated to a considerable degree by the conditions of the labor market in the foreign countries, with pronounced characteristics of negative selection (the discharge of workers who were not in perfect physical condition, unskilled workers, and so on) by employers.

* According to the figures of the 1971 Population Census, the share of these persons is 76 percent.

From 1973 to May 1979 a total of 134,000 persons returned from employment abroad and registered with employment security communities. However, neither at the time of departure, nor on their return are all citizens yet registered with self-managed special-interest communities for employment security, so that it is estimated that the total volume of the return flow over that entire period amounts to about 400,000.

As for the composition of persons who have registered with employment security communities after return from employment abroad, unskilled workers predominate; among them there are quite a few elderly and sick and workers with occupations for which it is difficult to provide jobs at home. Nevertheless, an ever larger share of those returning and registering with employment security communities has been finding employment with their help (1 in 4 in 1976 (8,835), 1 in 3 in 1977 (8,800) and 1 out of 2 in 1978 (8,870)).

It is evident from these figures that our society has been making considerable efforts to employ Yugoslavs who are returning from employment abroad. However, the opportunities for employment in the socialized sector, especially in view of the inappropriate composition of the returnees with respect to skills, are not sufficient. Aside from employment in the socialized sector, the returnees from employment abroad are working on their own private farms or opening their own craft and trade or other service establishments.

The Measures and Efforts of Society To Ensure Conditions for Productive Employment in Our Country, Particularly of Those Returning From Abroad

Proceeding on the basis of the basic commitment that the outflow of our citizens to work abroad has to be gradually reduced and conditions created for their return, and consistent with the policy that has been sketched in this field, a number of measures to create greater opportunities for productive employment and self-employment of the population, to raise labor productivity and on that basis to increase income have been and are being taken with the backing of all the social forces in order to eliminate the two principal motives which our citizens have in going to work abroad (employment and achievement of a higher standard of living). In order to derive maximum benefit from this potential in terms of work and professional competence, conditions are being created for more rapid development of small business and to encourage saving in Yugoslavia and the commitment of savings to arrangements which will open up new jobs and will ensure stable and lasting conditions for development of self-employment.

In the 1974-1979 period the number of workers employed increased by 1,084,000, or an average annual rate of 4.5 percent. This high rate of employment in the socialized sector made it possible to employ not only the young generation coming of working age, a further transfer from agriculture and a portion of the unemployed, but also a portion of the returnees from work abroad.

The creation of jobs in Yugoslavia has done much to reduce the need for employment outside the country. The growth of employment has been particularly favorable in the economically less developed republics and the Province of Kosovo, which in view of the pronounced demographic population pressure and more restricted opportunities for employment is very favorable from the standpoint of creating the possibilities for reducing the outflow of people from these regions seeking employment abroad.

In order to guarantee satisfaction of the needs of the population and society as a whole, as well as the labor supply, especially returnees from temporary employment abroad, the constitution and the Law on Associated Labor have furnished the essential prerequisites for stable and rapid development of self-employment with personally owned equipment and all forms of labor and private capital in the system of self-managed associated labor.

However, the results achieved in developing self-employment have not been satisfactory and are far short of the real potential for their development. The number of persons employed in the private nonfarm sector increased in the 1973-1979 period from 342,000 to 391,000, or only 49,000. The number of craft and trade establishments numbered 131,000 in 1977, which is about 13,000 fewer than in 1973, while the number of workers employed in them increased only 6,000 and amounted to about 61,000 in 1977, which means that only in 1 shop out of 2 is there a worker employed in addition to the owner. The pooling of labor and capital within contract organizations of associated labor is also going very slowly, so that in the 1976-1979 period there were 56 contract organizations established with about 1,000 employees.

The large gap between the size of the labor supply and society's insufficient material base to absorb and employ the entire available manpower potential in a relatively short period still stands as a factor impeding the faster return and reintegration of Yugoslavs who have been employed abroad temporarily. As a matter of fact, the number of persons registered as unemployed in accordance with the present methodology increased in the 1973-1979 period even though the rate of growth slowed down in the last 3 years, from 382,000 to 762,000.

This growth of registered unemployment over that period was indeed affected by the reduction of people taking jobs abroad and the ever more pronounced return of Yugoslavs from work abroad. We can conclude from this that resolving the question of unemployment in general, aside from its broadest economic and social significance, also has specific significance from the standpoint of implementing the policy of employment abroad, especially with respect to creation of conditions for diminished outflow and gradual return from employment abroad.

A Number of Measures Embodying the Features of the System and Social Compacts Aimed at Creating the Most Favorable Conditions for the Return of Yugoslav From Temporary Employment Abroad

Pursuant to the principle that the employment and stay of Yugoslavs employed abroad are temporary, a number of measures and efforts have been undertaken to find, build and implement solutions embodying features of the system in the field of employment and new jobs in order to create conditions for reduction of the outflow and the gradual return from employment abroad.

With the adoption of the 1974 SFRY Constitution and the Law on Associated Labor the constitutional commitments and elements of the system were established with respect to creating conditions for higher employment in Yugoslavia, and conditions were thereby also created for reduction of the outflow and the gradual return. The Law on Associated Labor envisages the possibility that organizations of associated labor may attract the money of individuals in order to expand the material base of their operation and create broader opportunities for hiring, the basic forms of association of working people who are self-employed and various forms of linkage with the system of self-managed associated labor.

With enactment of the Customs Law and its amendments and supplements numerous exemptions have been extended to Yugoslavs returning from temporary employment abroad with respect to importation of equipment and jigs, tools and fixtures, which has acted as an incentive for them to return and invest their own capital with a view to self-employment in agriculture or in craft, trade or other service activities.

In order to achieve the fullest possible coordination of the efforts of all social factors toward creation of conditions for higher employment in Yugoslavia and thereby reduction of the outflow and gradual return, as well as toward establishment of the joint bases of development policy and the policy governing creation of new jobs, particular attention has been paid to the question of concluding social compacts and self-management accords in this area. The Social Compact on the Bases of Joint Policy Governing New Jobs in the SFRY, the Social Compact on Education of Yugoslavs Employed Abroad have been enacted, and a social compact is being prepared on certification of skills workers have acquired through practical experience.

Protection of Yugoslavs During Employment Abroad and in Connection With Their Return to the Country and Reintegration

Throughout this entire period our society has been paying every attention to protection of the rights and status of Yugoslavs employed abroad temporarily. To the end of better organized and more complete guidance of the temporary employment of our citizens abroad and creation of conditions to correct various adverse consequences which could come from their stay abroad, through legal and other arrangements sociopolitical organizations,

sociopolitical communities, the competent authorities and other factors have taken a number of measures both domestically and through intergovernmental cooperation with the countries where Yugoslavs are employed to strengthen their relations with the homeland, to provide them protection through diplomatic and consular missions, to assemble them together and inform them, to provide their children schooling in their native language, etc.

In 1973 the Law on Basic Conditions for Temporary Employment and Protection of Yugoslavs Employed Abroad was adopted to regulate the basic conditions for the temporary employment of Yugoslav citizens abroad and to institute certain elements of protection while they are employed abroad temporarily. However, the altered living and working conditions of Yugoslav nationals and the prolongation of their stay abroad have necessitated a more comprehensive solution with respect to protection of their status and rights and more effective organization for implementing that protection. With the advent of the so-called "second generation"* of migrant workers, the problem of fuller protection of their status has arisen.

Numerous forms of economic, scientific, technical and other cooperation, etc., have developed between the SFRY and other countries as the faster return flows have necessitated that certain issues related to return and integration be resolved.

These were the reasons giving rise to the need for the basic conditions for temporary employment and protection of Yugoslavs employed abroad to be regulated more comprehensively. To that end the proposed version of a law on protection of Yugoslav nationals employed abroad temporarily was prepared, and it has just been enacted. It regulates all the forms and cases of departure of Yugoslavs to work abroad, regulates protection in the broadest sense of the word, i.e., protection in connection with departure (conditions for departure), direct protection (rights during employment) and protection on their return (the obligation to create conditions for their return), as well as the tasks of the competent agencies in guaranteeing and enforcing that protection.

The law should contribute to guaranteeing full protection and also to creating conditions for gradual return and for employment and self-employment in Yugoslavia.

Protection of the Rights of Yugoslavs Working Abroad Temporarily From the International Standpoint

Every attention has also been paid to protection of the status and rights of Yugoslavs from the international standpoint, both at the multilateral level through the International Labor Organization, the Conference on

* Children and adolescents who are living abroad with their parents and are coming of age for education and employment.

Security and Cooperation in Europe, OECD, EEC, as well as bilaterally with individual countries. The results achieved in this area are very significant and pertain not only to rights arising out of the employment relation and social security, but also to the child allowance, unemployment compensation, the right of assembly, self-organization, vocational training, information, the schooling of children, preservation of national identity, maintenance of relations with the homeland, etc.

Except for Switzerland and Denmark, bilateral agreements on employment have been concluded with all countries of western Europe in which there are Yugoslavs employed temporarily. Although the scope of the rights and protection regulated by these agreements varies, they have provided a formal basis for favorable treatment and protection of our citizens. Nevertheless, there still exist several issues which have not been regulated, commitments which are evaded, and unilateral renunciation of provisions already adopted, etc.

On the question of financing the return, that is, of the share of the countries employing our citizens in opening up jobs in Yugoslavia to employ Yugoslavs returning from employment abroad, no significant results have yet been achieved. The Kingdom of the Netherlands has provided funds amounting to 6 million guilders to open up jobs in the underdeveloped regions (used to develop plants at Struga and Rozaja), and the Kingdom of Sweden, in the context of multilateral cooperation through the OECD, is sharing in financing an experimental program to open up jobs in the regions from which emigration has been pronounced. Even though broad opportunities have been offered for cooperation in all aspects, results have so far not been achieved with other countries in obtaining their share in financing the return, though Yugoslavs have through their work made a considerable contribution to the development of those countries.

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